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Original Communications

OUR MEDICAL SOCIETIES. THE COUNTY AND DISTRICT SOCIETY, A WONDERFUL AID TO THE COUNTRY PHYSICIAN IN HIS POST-COLLEGE WORK AS WELL AS TO THE STATE AND NATIONAL ASSOCIATION.*

By D. M. KIPPS, M. D., Front Royal, Va.

This is indeed a very strange world in which we are living. There are those who are worthy and are seeking honors which they frequently do not get, and there are those who are unworthy, do not seek honors, and yet have honors thrust upon them as it were. Such is my condition. I do not feel that I am entitled to the great honor you have conferred upon me. However, I am none the less appreciative, and want to thank the Nominating Committee and the members of this Society for this great honor.

In this wonderfully progressive age in which we are living when medicine and surgery are making such gigantic strides, it is high time for us to get busy and join the procession. It is a very difficult matter for a man to accomplish very much alone. What we need is team-work, co-operation and organization. Just when, where, and by whom, the first county medical society was organized I do not know, but in a general way we know that the oldest county societies in the United States are those of New Jersey, some of the New England States, Virginia, and South Carolina, but I have not specific information as to the dates of organization of all these states. The New Jersey Medical Society was the first state association organized in this country, and this society is now nearly one hundred and fifty-nine years old, having been organized in 1766. It had a period of inactivity, however, so that Massachusetts now claims the distinction of having the oldest state society in point of continuous operation. It was organized in 1781. Connecticut was organized in 1792 and Maryland in 1812. Vermont and Delaware also have societies that are considerably more than one hundred years old. The American Medical Association was organized in 1847 and reorganized in 1901.

The county medical society is the nucleus of all medical organizations. Every man in the State has an opportunity to become a member of a county society, and it is his duty to take advantage of this opportunity. The idea of the county society as the basic unit of medical organization has never taken root in Virginia as it has in all of the other states except Massachusetts. Massachusetts, the next oldest state association in the country in point of time of organization, and actually the oldest in so far as continuous operation is concerned, was organized on the district basis and that plan has continued in operation up to the present time. In all other states, the county society is the basic unit of organization, but as stated above this plan has never been completely carried out in Virginia. I believe it is generally conceded that the county society is the logical basic unit and the success that has attended organization on this plan in practically all of the states, seems to show that our present general scheme of organization is the correct one. While the district medical society is a powerful aid in maintaining the efficiency of medical organization, I do not believe that the county society should be abolished for that reason. When it comes to matters of local interest, the settlement of questions arising between individual physicians who are associated one with the other in every day work in a single county, organizational discipline, and other matters of this kind, the county society seems to be a necessary agency. Under our present scheme of organization the county society is the sole arbiter of its own membership. This seems to be a thoroughly democratic provision and one which should be conserved.

The constitution and by-laws of every state medical association, I think, provides for organization and operation of district societies. In New York, Pennsylvania, Ohio and other

*President's address before the Medical Association of the Valley of Virginia, at its meeting in Clifton Forge, June 4, 1925.

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states, district societies are working to splendid advantage. They are not intended to supplant, but to supplement the county societies. These district associations play an important part in the organization of the profession in the state and can be made helpful not only by offering opportunity for larger gatherings of members and better programs, but they can be made a powerful stimulus for the improvement of its individual members, and also of medical organization in the individual counties.

At the 1913 meeting of the Medical Society of Virginia changes were made in the constitution and by-laws, whereby it became necessary for the various counties in the state to organize county societies. Under our new constitution the council shall have authority to organize a medical society in every county in the state in which there exists no component society. Dr. Southgate Leigh, who was president of our state society in 1913, made strenuous efforts to establish a county society in each county in the State. In December, 1914, in a paper read before the Southside Medical Association at Petersburg, Va., Dr. Leigh stated: "At the last meeting of our State Society our Committee reported briefly as follows: Number of societies granted chaters forty-sevent. Number of counties combined with others seven, making a total of counties chartered fifty-four. Counties organized or in process of organization twenty-three, making a total of seventy-seven, leaving only twenty-three counties not looked after. Number of new members added to the State Society chiefly through the component county societies about 300." Now after a lapse of ten years or more, according to the American Medical Association Bulletin, June, 1924, we have thirty-two component societies. Number of counties not organized forty-three, which would leave twenty-five that are combined with the other societies. It would seem too many of our county societies are inactive, moribund, existing in name only. According to the constitution and by-laws of our State Society the Council is held responsible for this condition. Councilors are supposed to visit the societies in their respective districts at least once a year. I wonder how many do so? Councilors, as I understand it, are supposed to inquire into the condition of the profession, to organize component societies where none exists, to be peacemakers, censors, and to improve the zeal of county societies. The Councilor can help materially in securing better programs for the county societies in his district, if he will attend their meetings once in a while. His very presence is a stimulus to the men to do better work. The State Council is the body of foremost importance in our organization scheme, and if the Council would function as intended by the by-laws of our State Society, within one year we would have a component society in every county in the State. Is this expecting too much? Let us see what some of our sister states are doing. Alabama has sixty-seven counties in the State and sixty-seven component societies. Connecticut has eight counties and eight component societies. Delaware has three counties and three component societies. Iowa has ninety-nine counties and ninety-sevent component societies. There are no counties in the State not organized, so I take it two counties are combined with other counties. Kentucky has 120 counties in the State and 110 component county societies, only ten counties in the state not organized. Maine has sixteen counties and fifteen component county societies. Only one county in the State is not organized. Maryland has twenty-three counties and twenty-one component county societies, and only one county not organized. New Hampshire has ten counties in tthe State and ten component societies. New Jersey has twenty-one counties in the State, and twenty-one component societies. New York has sixty-two counties in the State and sixty component societies, only one county in the State not organized. There are some other States that compare favorably with those just mentioned. Virginia has 100 counties and according to tabulation prepared from answers to questionnaire sent out by the efficient Secretary of our State Society, we have fifty-one component societies, nine societies representing twenty-seven counties, making sixty-nine counties reported as having received charters. Eleven counties claim charters, but do not find dates of receiving them. Three counties are referred to in some place as chartered but date is not known. As there is some doubt about these fourteen counties, I do not think we can count them. Only two societies have received charters since 1915. A good many of the societies that have received charters are inactive and are in a moribund condition.

Gentlemen, this is not a very creditable showing for our State. It is to be hoped that our Council will get busy and organize a component society in every county in the State where none exists, and reorganize or rejuvenate those that are inactive and that exist in name only. I do not see how any country physician can keep himself abreast of the times without the stimulus that comes from attending our medical society meetings. The average country physician is loath to read a paper or to take part in the discussion of a paper before our State Society, or even before our larger district societies, unless he is a member and has had some training in his county society. Usually the physicians in a county are well acquainted with each other and in the county society meetings do not become embarrassed, but feel perfectly at home with their colleagues in the reading of papers and the discussions that follow. These county society meetings stimulate members to do better work and cause them to have more confidence in themselves. The man who stays at home and does not attend his society meetings but depends on his own individual experience and the reading of text-books and medical journals for his improvement, will soon find that his work is becoming more and more monotonous and will get into a rut where he ceases to make any improvement unless he gets out among his colleagues and sees what they are doing. I repeat what I said in the beginning of this paper. What we all need is team-work, cooperation and organization.

SOME OBSERVATIONS ON LATERAL SINUS THROMBOSIS.*

By JAMES A. BABBITT, M. D., Philadelphia, Pa.
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Proper appreciation of the courtesy extended by your Society can only be expressed in the effort to present from research or experience something of real practical value, and this title has been selected from the somewhat unique position it holds among the well-beaten paths of otolaryngologic study. Tonsillar pathology, sinus technique, laryngeal neoplasm, and mastoid variation, have been most generously, well-nigh exhaustively, treated, and conclusions reached of comparative uniformity. These familiar grounds avoid monotony only in the sympathetic accord with one's personal success or failure.

Sinus phlebitis and thrombosis have indeed no paucity of literature and research, but their obscurity and variation are intensely stimulating. The more one studies their occult manifestations, the deeper he is drawn into embryologic, physiologic, and pathologic speculation. The suggestion is ventured, that tucked away in the case recollection of each operator in this field are not a few post-mortem regrets hovering around the term — lateral sinus thrombosis.

It is not the purpose here to fatigue with exhaustive review of the literature (which should include in this country the splendid contributions of Barnhill, Day, Lillie, Phillips, Tobey, Smith, and many others), or extended case report, save in one special instance, hitherto unreported, details of which will be reserved for the close of the paper. It will better satisfy the title to discuss the general background and some of the unconventional types which have occurred in recent months. The test in this field lies in its frequent surprises—Mason's words are trite, "never prescribe for earache over the telephone."

It is perhaps of basic importance, as Randall suggested in a recent meeting, to differentiate the terms thrombosis and phlebitis, the former of which means the definite deposit and organization of fibrin clot, subject to embolic detachment and distant deposit, and the latter, toxic inflammation of the vessel wall, perhaps the only condition present in a large percentage of perisinus abscess cases which do not require resection of the sinus wall, and which recover with sufficiently prompt surgical drainage, even with premonitory meningeal symptoms.

The embryology and anatomy of this area are interesting. The early anterior, middle, and posterior plexuses of cerebral veins, draining into the median vein of the head (which is an extension forward of the anterior cardinal vein) by anastomosis and atrophy, following the development of the otic capsule, coalesce to form the large lateral sinus trunk, conveying outward and downward in each sigmoid groove close to the developing internal ear and later the mastoid cells, the right draining apparently from the superior longitudinal (sagittal) and the left from the occipital vein and the inferior longitudinal via the straight sinus.

*Read before the Virginia Society of Otolaryngology and Ophthalmology, at Winchester, Va., May 7, 1925.

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These great collecting sinuses, before entering the jugular foramen, pass close to the mastoid group, as shown in the sectioned specimens, averaging but half an inch distance from the supra-meatal spine. Again, at birth, as pointed out by Dunbar Roy, quoting Toynbee, the position of bone forming the fossa auditoria is but half or three-quarters of a line in thickness—membranous meatus on one side, dura of middle fossa on the other. In a word, this slowly eddying venous current passes in dangerous proximity to the peculiarly vulnerable area of infection, the human ear, and furthermore the ear has but comparatively little automatic resistance to its external, pharyngeal, and lymphatic exposure. Then again, as if to enhance this danger, various emissary veins appear—sagittal, mastoid, condyloid, etc., linking sinuses to extra cranial surface.

The pathologic process involved may be very simple or very obscure—simple, if markedly diseased mastoid cells are in close proximity to sigmoid walls, obscure when all primary mastoid symptoms have disappeared for a considerable period of time, with only slight latent canal discharge. The natural course of infection would seem to be, by direct extension from diseased mastoid, directly through the internal table.

Many authorities quote direct infection from the tympanic cavity and external canal to the jugular bulb, even primary infection of the jugular bulb. Phillips classifies these avenues in his conclusion:

(a) Dehiscences in the parietal wall.

(b) Direct extension of active purulent bone lesion.

(c) Through involvement of smaller veins or intermediate anastomotic veins (but he also quotes Boenninghaus' statement that infection may occur from within the labyrinth directly to the bulb).

G. A. Moore quotes the enumeration of Adami as to the causes of sinus thrombosis:

(1) Slowing up or stagnation of blood.

(2) Eddying of blood (Von Recklinghausen).

(3) Hemolysis.

(4) Bacteria and their products.

(5) Disease and injury of vessel wall.

It is on the side of diagnosis that one's major difficulty occurs, and this is, by its very nature, a physiologic problem, or at least the interpretation of alterations in the physiologic side of thrombosis pathology. Assuming that infection has taken place, penetrated to the endothelial lining, formed a "white wall thrombus," or changed by admixture of blood clot to "red" thrombus, how shall this be recognized?

Conventionally, this should be revealed by chill, rise of temperature to 103, -4, or -5, with proportionate increase in pulse rate, sudden cessation of all symptoms, return again in twelve to thirty-six hours to former height, increase of local symptomatology—pain parietal, post auricular, or below tip—tenderness over tip or below, pain on pressure over emissary exit, with, quite likely, actual swelling, and extending to jugular vein; thickened, doughy feeling along its course, head often held toward affected side, with suggested relation to condyloid veins; mentality strangely clear, ocular report occasionally of choked disc from involvement of ophthalmic vein, blood stream showing active bacteremia, but sometimes not; leucocyte count and polynuclears both increased. Patient seems more ill than could actually be accounted for by associated or previous mastoid symptoms. This will perhaps be accepted as the conventional picture.

Unfortunately, none of the cases in the writer's recent experience has conformed in any material degree to this outline, and this will be emphasized in the cases to be later cited. They even failed to present any of the more unusual symptoms presented by various authors, laryngeal paralysis from thrombic pressure, stethoscopic bruit from jugular vein, oedema of lids, exophthalmos, etc.

As the purpose of this paper was definitely to discuss these variations, it might be pertinent to omit further considerations of the general problem.

The Blood Stream Infection

The primary steps in examination, after properly regulating the hospital care and arrangements for comfort of patient, would naturally be blood culture and X-ray examination. As the X-ray examination under present methods still gives some uncertainty in differentiation, the blood examination assumes first place in position of importance. This should be done immediately, on suspicion of thrombosis possibility, and repeated. Time is an important factor here, and this should have

the same precedence that one gives the tuning fork tests in analysis of deafness. In the two most serious of the cases presented here, in both of which the jugular vein was resected, one had a pure hemolytic strain; the other, in spite of repeated tests, had no growth, save some slight contamination of unimportant organisms.

This statement, however, in no way depreciates the importance of immediate blood culture. If one suspects a blood stream infection, the culture should have its time period for growth, while other symptoms are being determined. The probable positive report, by consensus of opinion, would be streptococcus, though typhoid and other types have been reported.

The Blood Cell Examination

It is disquieting to believe that a high leucocyte should be present in thrombosis, and then fail to get above from four to six thousand leucocytes in repeated examinations, yet such was the fact in case reported at the Triological meeting last summer. A search of recorded examinations has, however, revealed that this is often the case. One is much relieved to read Sondern's report in "Laboratory Aids to Otologic Diagnosis," that inflammatory lesions confined to cellular bone structures do not show as high leucocytosis or relative polynucleosis as noted when soft parts are involved. He also finds that pyogenic infections mixed with tuberculosis, typhoid, or measles, or following these diseases, have relatively low figures. Smith, quoted by Moore, claims that with chill and sudden rise in temperature, W. B. C. 30,000 or more, suspect pneumonia; 20,000, suspect meningitis or erysipelas; 10,000 to 12,000, sinus thrombosis. At all events, low W. B. C. count has seemed the rule in some very definite cases of thrombosis. The resistance line curve, as suggested by Sondern, would seem most important. This is made up by joining the leucocyte total above 10,000 for each corresponding part of the day to the neutrophile register, then comparing in curve the daily position of these base lines.

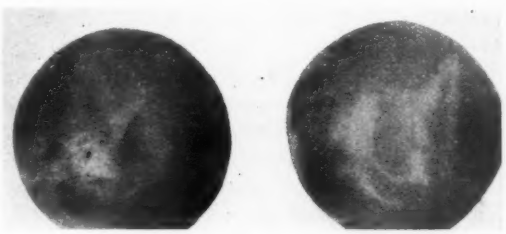
Confusion of Other Concurrent or Secondary Diseases

In the case reported by the writer in 1924, expert medical advice diagnosed typhoid, and the case was moved to the medical wards, prior to the final decision operatively to explore the lateral sinus.

This is especially confusing, if lower splenic information also confirms typhoid picture. If thrombus, in course of breaking down, releases infective emboli, involvements of pulmonary areas, spleen, kidneys, and apparent joint metastases, these may entirely blind one to the prior possibilities of lateral sinus involvement. Again the thrombotic clot, even after contributing to a bacteremia, may become walled off with plugs of fibrin at either end of the sinus, these continuing sterile, while the central portion in the sinus cavity remains infectively active. Friedenwald has presented a splendid study of these obliterating efforts of nature. As an interesting complication in the case cited below, there developed an acute endocarditis either with, or shortly following, a large perisinus abscess.

Instructive Points From Recent Cases

Case 1.—James D., twelve years of age, admitted to the University Hospital, Philadelphia, in Dr. Randall's Service. This case has been fully reported and can be studied in reprint. Simply three points in the summary will be quoted here.



X-Ray of Mastoid. James D., 1923. Lateral sinus thrombosis. Left sigmoid apparently blocked.

a. Irregularities in infective evidence, but subsidence of mastoid symptoms.

b. Persistent low leucocyte count and pressure of associated medical opinion that the case was typhoidal.

c. Remarkable response to blood transfusion in the presence of profound bacteremia.

Case 2.—Alfred D., age fifteen, admitted to Mary Drexel Children's Hospital, March 16, 1924.

Patient had irregular mastoid symptoms for three weeks before operation. Repeated paracentesis did not relieve. Mastoid evidence very slight; sinus symptoms not conventional; leu-

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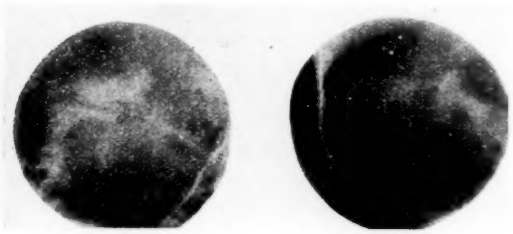
cocyte count the day before operation only 8,200; polynuclear 71; mastoid X-ray, dense shadow over mastoid area; operation disclosed perisinus abscess and small amount of pus.

Case 3.—John M., age eight, admitted to Dr. Fetterolf's service in University Hospital March 2, 1925. Fulminating mastoiditis. X-ray examination will be demonstrated in slide. This case presented two points of special in-



X-Ray of Mastoid. John M., 1925. Perisinus abscess. Plate shows mastoid emissary.

terest. Operation on the mastoid presented the ordinary condition. Posterior wall had a suspicious pallor, suggested by the resident assistant. Search was continued, and suddenly three or more drachms of pus burst out from around sigmoid portion of sinus, filling the mastoid wound. Sinus pulsated; exposed area showed whitish wall; thrombic appearance; was not opened.

On March 8th the child suddenly developed a tachycardia and blowing systolic murmur at base and apex. Examined and pronounced by Dr. Gittings as endocarditis with valvular insufficiency. This was not recorded as present prior to the operation. The mastoid wound promptly healed. Case was transferred to children's ward April 1, 1925. On May 4th child was almost completely convalescent and soon to be discharged. It should be added that blood culture on the day after the operation was reported pyogenic streptococcus (hemolytic.) Blood culture five days after the operation streptococcus mitis (non-hemolytic) type favorable to endocarditis, and staphylococcus albus. Blood culture ten days later negative.

Case 4.—Florence S., age eighteen, admitted to Mary Drexel Children's Hospital March 22, 1925. Patient presented history in office consultation of having "floated about" for two months with irregular ear trouble, intermittent discharge, and more or less intermittent pain and post auricular swelling. Patient had been persistently refused operation as symptoms did not make her appear sufficiently ill.

Leucocyte counts—March 22nd, W. B. C., 8,600, polynuclear, 60. March 23rd, W. B. C., 7,400, polynuclear, 45.

The case was admitted on Sunday, and X-ray was not easily obtainable. However, it seemed clearly mastoid, was operated, and practically nothing of importance was found in the mastoid. As pain centered in the neighbourhood of the mastoid emissary, the sinus plate was opened, and a drachm or more of pus was found around the sinus. There was no indication to open the sinus and the case recovered promptly.

Case 5.—This case not in chronologic sequence, but sufficiently important to merit more extended history.

Albert N., eight years, admitted to Mary Drexel Hospital, August 15, 1924. Only the salient points in this history will be reviewed. Copy of the complete case records, temperature charts, and laboratory studies, are here for your examination.

This boy entered the hospital, toxic, flushed, and very weak, some vertigo and vomiting, rational, neck not rigid, Koenig negative, pupils normal, left ear discharging profusely, and very evident fulminating mastoiditis. Later investigation of his history revealed the fact that he had discharging ears intermittently for his whole life, with four major crises, after pneumonia, "flu," scarlet fever, and whooping cough. Inciting cause for this hospital entrance, a "boxing" blow on the ear by teacher. He was operated on the day after admission. A badly degenerated mastoid cavity was cleaned out and sinus wall removed, showing well-defined perisinus abscess. This was drained, but lateral sinus was not opened at this time. His temperature continued high, periodically above 104°, and the lad appeared seriously ill. On August 20th, a few days after his admission, he was again taken to the operating room, sinus opened, large thrombic clot removed, until free bleeding occurred at torcular and bulbar knee ends, jugular vein was exposed, and ligated by Dr. Harry Deaver, sinus plugs applied, and patient returned to bed. Two days later, a deep cerebellar abscess was revealed, extending two and one-half inches obliquely inward and backward. This was apparently a cerebellar surface abscess,

and was probed cautiously nearly to the position of the 4th ventricle.

For the next two weeks the boy did not do well; temperature was high, nystagmus and fibrillary movements of the left side developed, there was increase in vomiting, projectile type, neck was rigid, and patient was irritable. On September 3rd temperature dropped to nearly normal for brief periods, but was 105° again by September 8th.

The wound was carefully washed and drained with Dakin, or mercurochrome solution. On September 10th, the 25th day of disease, temperature dropped to normal, and continued so for approximately six days, running up again on September 16th to the neighbourhood of 102°, with very variable chart line, reaching 104° on September 22nd.

On September 23rd everything went wrong; patient weak and irritable, nystagmus and fibrillary contractions active, projectile vomiting all day. After consultation with Dr. Edmund Piper, it was decided to give 10 c.c. of mercurochrome intravenously. This was empirical, as no positive blood culture could be obtained. It was done simply as a last resort. Immediately the child appeared improved, rested that night, and next day was able to take food again. In three days, by September 26th, temperature dropped to normal line and has practically stayed there to this day. Save for occasional intermittent pulse everything went with uniformity, and the patient was discharged on March 8, 1925. He was continued under observation, wound dressed, and out-patient life prescribed.

On Friday, May 1st, his mother brought him to my office a hearty boy. Practically all rigidity and ataxia had disappeared. This boy was clearly saved by three things: prompt and complete mastoidectomy, and drainage of sigmoid sinus; careful watching by the hospital corps; and the injection of mercurochrome. His mastoid area with its crucial incision had apparently completely healed. He attends school, joins with other boys in his play, and, was literally snatched from the grave.

Conclusions

1. Lateral sinus thrombosis or phlebitis is more often antecedent to systemic infective disease than is ordinarily supposed.

2. Exploration of the sinus is indicated in the absence of positive blood culture, when ear history and other symptomatology point to this focus.

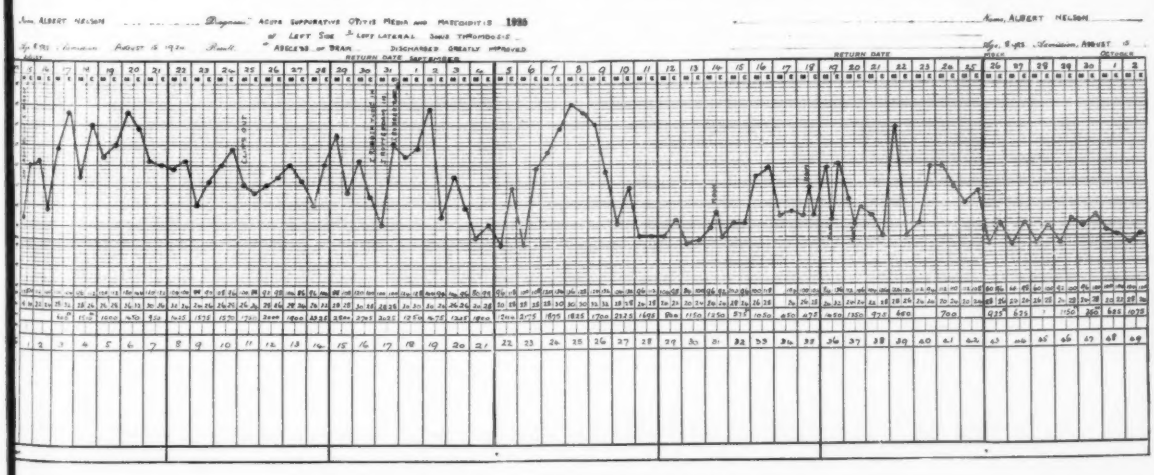
3. Leucocyte count is too variable an index in sinus infection to be of great value.

4. Persistent low grade mastoiditis will frequently reveal a perisinus abscess.

5. Blood transfusion and mercurochrome injection in selected cases have demonstrated their efficiency.

6. Blood culture and X-ray study should be primary procedures in suspected sinus infection.

7. The sigmoid sinus area is too frequently overlooked in the elimination of infection foci.



Temperature chart. Albert N., 1924. Lateral sinus thrombosis.

8. The variation in lesion resultant from basal sinus infection should urge a more frequent postmortem exploration in obscure fatality.

9. The response to appropriate sinus surgery is surprisingly favorable.

10. Modern bronchoscopic and radiographic study of the chest has marvellously changed the pulmonary picture. In the same parallel, further research and study of nature's obliterative efforts in the lateral sinus area may completely change its varying status in focal importance.

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2117 *Chestnut Street.*

HEART LESIONS.*

By JOHN W. PRESTON, M. D., Roanoke, Va.

In assigning me a subject of so broad a scope as the title implies, I take it that it is the thought of your Committee that a discussion of a decidedly practical turn best suits the occasion.

That diseases of the circulation merit intensive study is attested by the fact that facing the falling death rate of other maladies, that of heart disease is rising, and at the present moment it is responsible for the greatest number of deaths and disabilities of any in the registration area of the United States.

Of all the vital organs the heart is most amenable to interrogation. It is near the surface of the chest, so that its area and pulsations may be studied by the eye, the hand, and the stethoscope; and the load which it carries may be estimated by blood pressure. It is the one organ in the diagnosis and treatment of which the work of the observant general practitioner may approximate that of the specialist.

A word as to the examination of the cardiac patient as a whole may not be amiss. As medical experience grows, we are coming more to recognize the importance both of the general physiognomy of an individual, and likewise his hereditary tendencies as related to his functions and pathology. In this connection, in the matter of neuroses of the heart we are coming to note more carefully the asthenic, or, if one please, the enteroptotic type, carrying with it the long, lean, poorly knit, loosely jointed body, so well described in a recent article by Abt[1] who quotes Dickinson to the effect that one individual born in every five is of this type. From among these, aside from the neuroses, the greater number of rheumatics develop, which latter disease is held responsible for 60 per cent of crippled hearts. The troubles of this group come in the hey-day of youth when the tender tonsil is over-worked in its combat with the invading organisms of the upper respiratory tract; when the deciduous teeth decay and abscess; and the facial sinuses become clogged and are over-looked, but too often, for the reason that we forget that such a thing exists in a child.

Over against the asthenic type is set the plethoric red-blooded individual, who dines not wisely but well; who does not know an ache or pain till with on-coming middle life he puts on a load of flesh and forgets how to play, and in whose blood-vessels unexcreted poisons run riot.

Falling between the two is the over-worked and much worried individual who, like Cassius, thinks much and lies awake at night; into whose vessels and heart the corroding canker of care burrows deep, and whose malady is but too often labelled with the all inclusive term of "indigestion."

To be more specific as to the heart itself. It is of exceeding interest to note our changing evaluation of murmurs. In substantiation of this, I cannot do better than quote from the Surgeon General's Manual of 1917, in which the statement is made that "given a heart of normal size, and responding normally to effort, any murmur that is heard should be construed as accidental and insignificant unless it can be positively determined that it is a mitral or

*Read as part of symposium on the Heart before the Southwestern Virginia Medical Society, at Pulaski, Va., March 26-27, 1925.

aortic diastolic murmur." In other words, all systolic murmurs in a heart, whose area is normal, may be considered innocent until proven guilty by the incriminating evidence of abnormal behavior.

It is perhaps in the matter of determining the heart area that most of us encounter difficulty. The one greatest aid in the average case can safely be said to be the position of the apex beat, which, if well inside the nipple line, can with confidence be considered normal. It may here be well to stress the greater accuracy by which the position of the apex beat may be determined by locating it between the tips of the thumb and index finger.

In the matter of percussing out the area, I am exceedingly doubtful if in practical work much is to be gained by the effort to differentiate between deep and superficial cardiac dulness, as is advised by some text-books. If one can surely make out that lung resonance on the left reaches well to the cardiac side of the nipple line, and that no cardiac dulness extends to the right side of the sternum, I believe he does well, certainly in the female and in those with thick chest walls. It is in these latter that the fluoroscope, if available, is serviceable.

The irregular heart and the rapid pulsating heart particularly merit study on account of the varying causes. In the asthenic type, above referred to, these vagaries come as a natural sequence of disturbed nerve equilibrium. Yet the consideration of the disordered heart beat brings with it a recurring puzzle in the day's work. Its study with recording instruments is fascinating, but for our present purpose practical observations best suffice.

In the matter of the irregular heart, the one chief responsibility resting upon the practitioner is to differentiate the ordinary extrasystoles, or, if one please, the premature beat, from the irregularity incident to auricular fibrillation. In the former, it may be said that the greatest aid is the simple observation that the dropped pulsation, or extra pulsation, occurs with some regularity of sequence. For instance, if the number of irregular beats be counted per minute they will be found to run approximately the same number. On the contrary, in fibrillation the one notable thing is the *irregular irregularity*, if one may so express it, both in the count of the pulsations and in their strength.

Perhaps in diagnosing fibrillation the one best aid is to remember that a heart whose rate as counted at the apex is found less than a hundred, may fibrillate, but it rarely does so; and that a fibrillating heart is usually made worse on exercise, a functional irregularity often steadying.

One cannot insist too strongly that the thyroid and the digestive organs be carefully investigated in connection with every case of disturbed heart action; and that foci of infections be excluded, not always perhaps as affecting the heart directly, but for the indirect effect through the autonomic nervous system.

Perhaps one cannot do better in the above connection than to stress the fact that in almost every cardiac disorder, whether functional or pathological, there is mental stress, oftener in reality greater in the functional than in the pathological. Conversely, the statistics of the British Army[2] show that during the World War practically all soldiers sent to psychopathic hospitals had cardiac complaints. Out of 1,000 cases studied, 76.8 per cent had cardiac pain, and 67.5 per cent suffered from breathlessness. In this there should certainly be a lesson touching the demeanor of a practitioner toward his cardiac patient.

The differentiation of cardiac pain due to functional and to organic causes cannot be made by rule of thumb. "Heartache" in the normal heart is certainly something more than an idiom of our language, and it is no easy task to pick out from the mass of such sufferers, the distressed, care-worn woman, or the overworked business or professional man, for whom can one with assurance prescribe increased exercise, and with positiveness state that there is no pathology—a prescription, in such a case, of more potency than all the drugs in the pharmacopeia.

In further reference to anginas, it cannot be too strongly impressed that the day and time has passed when all can be classed together; and, further, that each case merits careful individual study. How, for instance, may the one be due to the toxins of focal infection; another be of syphilitic origin; another the result of excessive use of tobacco (though perhaps rarely); and still another to cardiac overstrain secondary to high blood pressure and faulty habits of living. Incidentally, it may be well for us to remind ourselves that patients suffering from high blood pressure, who are

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not frankly nephritics, and who escape cerebral hemorrhage, as a rule pass on to cardiac decompensation, with its numerous complications.

The role of the heart muscle is of the greatest importance of all in cardiac pathology. Even in frank valvular lesions it is not a question so much of how great is the leakage as it is one of how much reserve has the muscle, and how much scar tissue there is in the muscle. It may, therefore, be said that the crux of the whole matter and the final test is the evaluation of the muscle, and its blood supply, which latter goes hand in hand with muscle function.

In the matter of instrumental aids, while one gladly accepts all the help that can be had from the spirometer, the polygraph, the electrocardiograph and the X-ray, no instrument has yet been devised that can measure with a degree of accuracy the efficiency of the blood supply of the heart, and the stamina of the muscle. In the last analysis, it may be said that these things may best be determined by whether one tires too easily, and whether upon standing there is edema of the ankles, whether there is shortness of breath or distress upon hopping a given number of steps or upon climbing one, two or three flights of stairs. Accessory evidence is the cardiac area, determined as above indicated, and whether or not there is a tendency to fibrillation. Not content with these things, Pratt has well said in relation to the heart: "In diagnosis of heart disease consider not physical signs alone or signs combined with symptoms, or the response of the heart to exercise, for these are not sufficient, but consider the whole man, body and soul together."

Reverting, in conclusion, to the statement made in the beginning touching the alarming increase of cardiac deaths, may I not plead with each physician to do what he can to stem the tide and promote prophylaxis not only by a redoubled effort to prevent foci of infections, but that he become even more insistent in the care and hygiene of the asthenic child, and that he more assiduously warn those approaching middle life of the dangers of over-feeding, of over-weight, and of little exercise.

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Anchor Building.

TREATMENT OF ANTERIOR POLIOMYELITIS.

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Introduction. The subject of this, my first paper before the Clinico-Pathological Society, was selected because it was felt to be one in which everyone of us is interested, especially as regards the early treatment. No claim is laid to much that is original in these pages, but an attempt has been made to combine the knowledge gained in my private practice and the clinics of the Children's Hospital with the more recent findings of men in this country and abroad, as expressed in the latest literature. A clear discussion of the treatment of any disease is always aided by refreshing our minds as to the pathology, symptoms, and etiology, of the disease under discussion. With this in mind, a brief review will be made touching on the high points in anterior poliomyelitis.

Anterior poliomyelitis, or infantile paralysis, is an acute infectious disease, accompanied, in a majority of cases, by paralysis. The paralysis is incidental and not essential, and may be a weakening or total loss of motor power in certain muscles and groups of muscles, with little or no gross disturbance of sensation. It may be, and often is, widely scattered as to the muscles affected, and is primarily a flaccid paralysis, with reflexes lost or lowered.

Pathology. According to Jones and Lovett, "Infantile paralysis is a general infection, the results of which are most marked in the nervous system, in which at autopsy the meninges are found to be edematous and injected, a slight increase in the amount of cerebrospinal fluid also being present. The brain and cord are edematous, and minute hemorrhages can generally be distinguished.

"The first stage in the pathological process is an acute interstitial meningitis, usually most marked on the anterior surface of the spinal cord. In the cord itself there occurs a hyperemia, and a collection of small round cells in the lymph spaces surrounding the vessels (perivascular infiltration) as a result of which in many places the cells are so numerous that they press on the lumen of the vessels and obstruct the circulation. Minute or extensive hemorrhages occur, and there is extensive edema. The lumbar enlargement of the cord

is most often affected, and the anterior horns more often than the posterior or the white matter, as in the former blood supply is more abundant. Although the process by which the vascular lesions affect the nerve cells is in large measure a mechanical one, it is impossible to exclude the fact that the virus may exert some directly toxic action on these cells. The damaging effects, therefore, are to be attributed (1) to direct pressure on the nerve cells by hemorrhages, edema and exudate, (2) to the anemia following the constriction of the blood vessels, which is probably the most general and important change, and (3) perhaps to a direct toxic action of the virus itself on the nerve cells. On account of this pressure and anemia, the nerve cells may degenerate, yet if the exudate or hemorrhage, or both, are absorbed soon enough the cells may recover function; on the other hand, if the unfavorable conditions have been over-prolonged or excessive, the changes in the nerve cells may go on to complete degeneration. In addition to changes in the spinal cord, it is very important to note that the same sequence of changes are found to a less degree in the brain, medulla, and pons. The posterior root ganglia are practically always involved by lesions similar to those in the cord itself, and in experimental pathology this is the first step in the process. The terminal stage in the pathological changes is represented by the replacement of the motor cells by focal glioses (focal scleroses), due to increase of neuroglia tissue, which are analogous to fibroses and areas of scar tissue in other organs, due to increase of connective tissue. Shrinking occurs in severe cases. The destruction of spinal cells in any center naturally represents a loss of function of those cells, but the inter-communications between the bundles of motor cells and the connections between muscles and the motor centers are so free and so manifold that, unless the destruction has been very extensive, the possibility remains of establishing new connections between other cells and muscles. This fact serves as a basis for muscle training.

"The changes which are found in other organs in severe infantile paralysis are less striking than those in the nervous system, but are practically as constant, and constitute an extensive involvement of the lymphoid tissue and of parenchymatous organs. In the latter, cloudy swellings are usually met with, not unlike those of typhoid fever.

"In short, it must be remembered that poliomyelitis is a general toxemic process which affects organs throughout the body, but which apparently acts mildly; on the other hand, it is characterized by lesions in the spinal cord which occasionally prove fatal by involvement of the nerve cells controlling respiration or these changes may lead to greater or lesser impairment of motor function in certain of the cells controlling muscular action, most often in the legs. The general tendency toward spontoneous repair in this disease is explained by the pathology, which also shows why partial paralysis is so much more common than total.

"The paralysis at first presents the same appearance, from whichever of the causes mentioned it arises, and may be total or partial. The mildest paralytic changes result from anemia and edema, many of which clear up entirely, and all improve except where these causes have led to necrosis. Hemorrhage causes a more serious grade of motor involvement, but if it has caused only pressure on the cells, and not destruction, recovery may occur. Destruction of motor cells by anemia, hemorrhage, or direct action of the toxin, causes some degree of permanent loss of power in the parts supplied by them."

Symptoms. In mentioning the symptoms no attempt will be made to go into details as to the various types of poliomyelitis, as classified by Wickman and others, except to enumerate these various types. The usual symptoms, as we see the disease, will be gone into a little more fully. Emphasis will be laid on systematic examinations and accurate recording of the objective symptoms, especially the muscle groups involved. Wickman's classification is as follows:

1. Ordinary spinal paralysis, anterior poliomyelitis.
2. Progressive paralysis, usually ascending, less often descending, Landry's paralysis.
3. Bulbar paralysis, polio-encephalitis of pons.
4. Acute encephalitis, giving spastic monoplegia or hemiplegia.
5. Ataxic type.
6. Meningitic type.
7. Polyneuritic (multiple neuritis) type.
8. Abortive type.

Aside from Class 1, the ordinary spinal

paralysis, which is anterior poliomyelitis we commonly see in children, I wish to lay special stress on the last type, and say that I believe many individuals, both children and adults, have the so-called abortive type, or possibly a better term would be a mild type without much paralysis, and these cases are never diagnosed. There is no question but that many of the so-called encephalitic cases can be classed as acute poliomyelitis.

It is remarkable in how many cases, with deformities of more or less severity, it is impossible to fix a definite date as to the onset of the disease. Sometimes the symptoms of the acute stage are so mild as to be entirely overlooked, and the weakening and paralysis are the first symptoms noted. This difficulty in definitely fixing the date of the onset of the disease is not confined to the children of ignorant parents with large families, where acute spells of short duration may be ordinarily overlooked, but is encountered in families of fairly intelligent parents.

There are generally recognized four stages in the symptomatology:

1. The stage of onset.
2. Stationary period.
3. Partial recovery or convalescent stage.
4. Chronic stage.

Aside from the usual symptoms noted in all infectious diseases that vary with the intensity of the infection, symptoms that in many cases lead to diagnosis of rheumatism, influenza, meningitis, and at times even acute osteomyelitis, Platt, of England, calls attention to and lays emphasis on three important symptoms:

1. Stiffness in the neck.
2. Spontaneous pain in the back and limbs.
3. Marked tenderness of the limbs.

Albee calls attention to a skin rash resembling at times measles or scarlatina, purpuric and herpetic in character, that may be mistaken for one of the exanthemata. I have seen this skin condition in several recent cases. Paralysis comes on early in the disease. In many instances it is the first symptom noted by the mother. The reflexes are lost, although very early, and before paralysis ensues, the knee jerks may be exaggerated and later lost when paralysis begins. The paralysis is a flaccid one involving one or more muscles or groups of muscles of the extremities, and the spinal and abdominal groups. Whitman has noted, and it bears out what we find in clinics here, that the lower extremities are more often involved. His tabulation of the distribution is as follows:

One leg	1,120
Both legs	645
One arm	162
Both arms	33
Leg and arm	222
Three extremities	42
All extremities	194

In the Whitman group the upper arm is more often involved, with persistent paralysis, than the lower, the anterior muscles of the thighs and legs more often than the posterior muscles, and the adductor muscles of the feet more often than the abductor muscles. This fact also bears out my observation of chronic cases seen with hip and knee contractures, and foot held in equino-valgus.

As the acute symptoms of the disease subside, the *stationary period* comes on, in which the most noteworthy clinical factor is the disappearance of pain and tenderness, leaving only the paralysis.

The convalescent stage lasts an indefinite period, say from one to six months, or longer. Much of the paralysis during this stage gradually clears up as the congestion and mechanical pressure in the cord disappear, leaving only those muscles paralyzed which are affected by actual cell destruction.

The chronic stage may safely be said to begin if, after two years from the initial attack and after intelligent treatment during the preceding stages, the case presents paralysis of certain muscles or groups of muscles. In this stage, especially in neglected cases, we find the deformities and loss of function. I may say here that one of the objects of this paper before the Society is to emphasize the importance of early, intelligent, and persistent observation of these cases, and the early instigation of proper treatment to prevent these deformities in the later stages.

The causes of deformity are:

a. Force of gravity.
b. Loss of muscle balance.
c. Habitual posture.
d. Functional use.

Most of these factors combine to produce the deformities, but loss of muscle balance is probably the most important factor.

Examination. These patients should be examined without clothing, and the various

muscles involved in the paralysis should be noted and recorded. Lovett lays stress on the gait as important in reaching anatomical diagnosis, and we have found this a valuable aid in arriving at a definite idea as to the cause of the limp in lower limb paralysis. Walking of course can only be employed in those cases that have advanced beyond the acute stage and are in the convalescent period, and then only in cases with some active muscles still present. Too much stress cannot be placed on the nude examination. Much of importance is picked up in this way by observation. Lumbar and abdominal paralysis, and paralysis of the upper arm, which have been previously overlooked in superficial examinations of the extremities, are often thus detected. After noting the limp, and arriving at a definite conclusion, it is a good rule to examine, in order, the upper extremities, beginning with the hand, the elbow, the shoulder, the back, the chest, and abdomen, for signs of paralysis and weakness, then passing on to the hip, knee, ankle and toes. It is not essential to work out the separate muscles, and a very clear idea can be obtained by simply noting the various groups involved, the flexors, extensors, adductors, and abductors of the paralyzed joints, first testing without resistance and then with slight resistance. A full record of these findings is of great help in following out cases through improvement and cure, and also in arriving at definite conclusions as to surgical measures which may be needed to stabilize or improve function.

Treatment may be divided into that for:

1. Acute stage.
2. Prevention of deformity during convalescence.
3. Surgical procedure in chronic stage.

In the acute stage opportunity for early treatment depends, of course, on prompt diagnosis. The principle on which treatment must be based will be determined by a clear understanding of the factors causing the deformities. Lovett cautions against "too much treatment," meaning by this that too early or too vigorous massage is counter-indicated in the early stage. This, I think, we all agree to. I do feel though that we can lay down no hard and fast rule as to the time when massage should be started, or how often it should be given. Each case should be considered individually. As soon as diagnosis is made, these patients should be put at complete rest to protect the inflamed nerve cells from every form of peripheral stimulus. For this purpose we may use the plaster bed or the Bradford frame. The limbs should be immobilized in certain positions we will note, which will prevent the occurrence of the common contractures. For instance, the thigh should be extended, the leg extended on the thigh, the foot held at right angle, with neither pronation nor supination of the foot. The upper extremities should be kept at rest in abduction, not allowing the weight of the arms to pull on the shoulder. These points are important because the fixed deformities often begin within a few weeks of the onset of the disease. A little later, when the acute symptoms of the disease have subsided, we may begin to tell more definitely the muscles involved in the paralysis. These paralyzed muscles should be put in a position of relaxation. By relaxing the tendons of the paralyzed muscles, we are forestalling early loss of muscle balance, and can thus prevent in a great measure the unopposed muscle pull, which is the main cause of the deformities. For example, we many times see children with the tibial group apparently paralyzed and the foot held in marked valgus deformity. If the case has been untreated, it is difficult to tell whether the tibial group is acting, or whether it has been so stretched by the unopposed muscle pull of the peroneal groups that they cannot function.

Massage is of help in poliomyelitis after the acute tenderness has disappeared. No set time can be fixed as to when massage should be started. I have made it a rule to start light massage fairly early, say four or five weeks after the initial attack, and let tenderness and pain be the guide as to whether it should be kept up. If increase of tenderness is found after massage, it should be discontinued, and instituted later. Too much massage is a rather common error among physiotherapists, and is worse than leaving the patient alone. It only tends to fatigue the muscles, and rather predisposes to atrophy of the affected muscles. It is sometimes a problem to convince the parents that light massage, of twenty minute periods, two or three times a week, is sufficient. Massage, in the mind of the average laymen, is given more credit than it deserves. Do not mistake me, I am a strong advocate of massage, but simply as a means to an end, and with no

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idea of restoring muscle power. I quote from Kleen:

"The favorable action of massage on parts affected by infantile paralysis is undoubted, but it must be recognized that it has distinct limitations and that too much must not be expected of it. The proper stroking, kneading and manipulation of an affected limb, placed in a position where affected muscles are relaxed, stimulates the flow of venous blood toward the heart and increases the flow of arterial blood to the limb. It also facilitates the flow of lymph toward the center of the body by mechanical emptying of the lymphates and direct manipulation of the muscles must also in a measure empty them of waste products."

If a trained physiotherapist is not available it is far better to keep the patient at rest in splints, or split cast, and have the joints carried daily through their normal arc of motion, rather than have them unintelligently handled. It is well to remember that massage is benefiting the active muscles in a paralyzed limb, and, in so doing, is having the same effect as functional use, thereby tending to produce or increase deformity, unless supportive measures are used in conjunction with the massage to prevent o v e r b a l a n c e of muscle pull. A stretched tendon is an inefficient tendon, and does not respond to the motor impulses, even after nerve power has been restored. I have purposely devoted quite a little space to the acute stage of poliomyelitis, and, if it is borne in mind that the main object of orthopaedic treatment is the prevention of deformity and restoring of function, one can easily understand why this has been done.

I am often asked when treatment should be started. It should be begun as soon as diagnosis has been made, that is, the supportive part of the treatment. Unfortunately, outside of hospital services, many of our cases come to us rater late in the acute stage, and well along in the convalescent stage, with deformity well established from the pull of unopposed muscles, force of gravity, or functional use. To sum up the points in the acute stage of treatment, we should have:

1. Complete rest.
2. Early immobilization.
3. Prevention of muscle pull.
4. Delay of massage until tenderness and pain have disappeared, or until the convalescent stage.

Treatment in Convalescent Stage. During this stage of the disease patience of surgeon and parent should be of the stoutest. Mental attitude of the parents, ability to understand what the surgeon is attempting to do, and whole-hearted co-operation are of the greatest importance. It is in this period that much damage to the patient can be done. Parents are prone to become lax in their vigilance, or, worse still, they are apt to drift into the hands of osteopaths and chiropractors. Constant supervision and checking up should be kept in mind as of the greatest importance. Here too, intelligence or lack of it, in the child, comes in as a help, or a hindrance. A bright hopeful youngster will grasp very readily the idea of muscle training, and will succeed, where the dull child will fail. This applies equally to parents, an intelligent mother being a top sergeant in carrying out instructions. Muscle training will improve function and strengthen weakened muscles that are slowly coming back to normal, but care should be taken not to go to the point of fatigue at each sitting.

Should these cases be allowed to walk? Lovett, in his recent book, is rather inclined to keep the child from weight bearing in lower limb paralysis. He cites, for example, that the right hand recovers more effectively than the left, because of the natural tendency to use the right hand, and that in the legs, the rate of recovery is the same, which he interprets as definitely showing that exercise under proper control is good, but with weight bearing not so good. I can only judge from experience whether or not we should allow weight bearing, and here again enters the personal equation. If patients cannot be kept under observation, as, for instance, patients who live in the country and can only report at irregular intervals, I allow them to walk, with a proper brace to prevent contractures and deformities from overbalance of muscle pull. Such children are going to be allowed to hobble around whether we have interdicted weight bearing or not, and these are the much-deformed patients seen in the chronic stage with changes in the bony structures, due to stretching and contractions of the soft parts. Patients who are under rather constant supervision should not be allowed to walk until well along in the convalescent stage. By keeping them from weight bearing, but allowing exercises and muscle training, we can prevent fatigue and stretch-

ing of weak or paralyzed muscles, and hasten return to normal.

It is in this period of the disease, if back muscles are involved, that great care should be exercised in allowing these children to sit up unsupported. Many of our non-rachitic scoliosis patients, so markedly twisted and deformed, are the result of neglected poliomyelitis backs. Even with supportive casts and jackets these cases are very apt to go on to scoliosis if the muscles do not return to normal. Back paralysis is somewhat different from extremity paralysis, in that the deformity here is directly due to the paralyzed muscles, and not to muscle pull of strong muscles. The convexity is toward the good side. Split casts should always be worn where back muscles are involved, only to be removed for massage and cleansing. The support of the upper extremities on airplane splints, to prevent muscle pull by the weight of the arms, very often prevents subluxation of the shoulder. A suitable splint for the hand, in paralysis of the wrist, is advised, generally a cock-up splint. Before passing on to the treatment of the chronic stage of poliomyelitis, I will conclude the treatment of this stage by emphasizing these points:

1. Close supervision.
2. Intelligent understanding between parents and surgeons, and,
3. Quoting from a recent article by Legg, "emphasis on the evil results of over-fatigue, general exercise treatment without regard for muscle balance; and weight bearing without mechanical support in positions which favor deformity."

Treatment of the Chronic Stage. Massage during this period is of benefit, especially to weakened muscles, and following any operative procedure which may have been done. During this stage fatigue should also be guarded against. Many of our cases, which seem to progress satisfactorily through the acute and convalescent periods, are found, several months later, to have gone back. Muscles that have shown slight twitching, and even those which have been functioning, are seen to relapse to a state of flaccid paralysis. I believe this is brought about in great measure by forcing these children to a point of fatigue. Complete rest and gradual return to activity will often prove effective in restoring muscles to the point reached before relapse.

Braces. Apparatus of various types is most beneficial in this stage. Apparatus may mean anything from tilted heels and soles for a moderate valgus deformity, to rather cumbersome braces to stabilize flail legs, and allow the patient to indulge in "caliper" walking with crutches. I am not a believer in loading these children down with complicated braces, and they should only be used, made as simple as possible, where no operation can be advised that will prove of benefit. If we are to guard against fatigue, heavy braces are certainly not indicated. Following operations, especially tendon transplantation, some form of apparatus, depending on the individual case, is necessary during convalescence to hold the limb in the position of choice until stability has been established.

Operative Measures. One has only to read the many articles written by orthopaedic surgeons to learn how many different views can be expressed as to the best operation for given conditions. My own personal opinion is that we often lose sight of what any operation will do at best, namely, stabilize and establish muscle balance around a joint. If we attempt to transplant tendons with the idea that these transplants will act in exactly the same manner as the healthy tendon before paralysis, we are often doomed to disappointment. To expect, say, a ten horsepower transplant to do the work of a forty horsepower tendon, and this too in an entirely different direction and angle, is to expect too much. A recent article by Platt brings out many interesting points in this connection. He states that normally tendons of muscles with given strength are inserted in just the right part of the skeleton to overcome counter pull of certain other muscles diametrically opposed. He wisely thinks that in doing our transplants we not only over- or under-estimate the strength of our transplanted tendons, but attach our tendons in such a way that our leverage is poor. Another factor of importance in considering our transplants is our after-treatment. Legg has written a most sane article in a general review of this subject. He says:

"Another point to be considered in determining the operation to be used is the fact that transplantations are bound to fail unless good post-operative treatment is carried out. The transplanted muscle is temporarily weakened by the operation and must have careful massage and exercise to enable it to regain its

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strength. It also must be given careful re-education to enable it to take up its new function, for in many cases the mere mechanical change in its new line of pull will not cause it to produce the new action. If the cases are not carefully re-educated, they will not acquire the new function and the success of the operation is lost."

It can readily be seen, therefore, that many of our patients have to be eliminated from consideration of tendon transplantations because of the length of time they have to be kept under observation. In this group come patients living at a distance, and those whose parents will not co-operate in the after-care. No tendon work should be attempted until existing deformity, due to change in bony structures, has been remedied. Time will not permit detailed description of the various tendon operations which have been performed with more or less success, and bear the names of their originators. Some are good, many are not successful, perhaps, because of poor technique, at the hands of disciples. I have used the peroneus longus for the tibialis anticus for overcoming valgus deformity; the insertion of the peroneus longus and tibialis porticus into the os calcis to act for the tendo-Achillis; the use of one of the hamstrings for the paralyzed quadriceps, all with a moderate degree of success; but I cannot say that I am an enthusiastic believer in the universally good results reported from time to time. The use of silk ligaments has not been sucessful.

To overcome contractures, we resort to gradual stretching and application of casts, or to the more rapid procedure, tenotomies and fasciotomies, with the tendo-Achillis as the most often tentontomized. I am very much of Legg's opinion that open tendon lengthening is the operation of choice if the tendon cannot be manually stretched, rather than subcutaneous tenotomy. I do not believe a surgeon should work blindly when it is so simple to make an incision, judge of the amount of length you want and see exactly what you are doing. Insertion of tendons into bones to act as checks and to stabilize joints has been done with varying results. Most of the difficulty, if these cases are followed up, is due to the stretching of the tendons that have been so used. Gallie's results from *his* operation are probably better than in the hands of other surgeons.

After looking over our records in the office on cases done by the late Dr. Wm. G. Erving and myself, and noting the results as reported by various writers, I believe the bone operations, including osteotomies, with or without removal of wedges, arthrodesis operations, and for the lower extremities, Whitman's astragalectomy, will, in the great majority of cases, everything taken into consideration, prove more successful in accomplishing functional results. Whitman's astragalectomy, with strict adherence to his technique, especially in displacing the foot backward, has been in our hands the operation of choice for stablizing the foot.

For flail knee, with good gluteal muscles, arthrodesis of the knee gives good results. We have not been so successful in the few attempts made to stabilize the hip. For flexion contraction of the hip we have used Soutter's operation (transplantation of the hip flexors at the ilium which consists of sub-periosteal stripping down from the ilium of the hip flexors). This operation has been successful in that the patients were made more comfortable. It allowed us to get them about on braces with weight bearing on the formerly flexed leg.

In back and abdominal paralysis, the use of, first, a plaster jacket, and then a more permanent jacket of leather or celluloid, is indicated. Albee's bone graft for fixation of the vertebrae should be considered as logical. It certainly does improve the scoliosis, and has been successfully used by a few American surgeons.

Upper extremity paralysis is somewhat different from lower, in that we do not have to contend with weight bearing. We do have, however, to figure on finer motions, especially as regards the hand. Tendon operations to overcome wrist drop, and transplantations to give use of the thumb, are quite successful. Tendon transplantations of the upper arm, however, are not so successful. In deciding on operations on the upper arm, one important factor must be borne in mind. It is useless to do anything to improve function of the upper arm if the hand is useless, for after all the arm is only a sort of lever to bring the hand into play, and with a flaccid hand an improved arm is worthless.

Arthrodesis of the shoulder for deltoid paralysis, especially if the trapezius is active, is the operation of choice. In thus fixing the shoulder we obtain scapular motion and the

trapezius will act as an abductor of the arm when the patient shrugs the shoulder.

Summary in Treatment of Chronic Cases:

1. Judicial use of braces.

2. Tenotomies and fasciotomies for correction of minor deformities.

3. Osteotomies, arthrodesis operation, and astragalectomy, are the best stabilizing operations.

4. Tendon transplantations in selected cases, used alone or combined with other operations.

I have purposely omitted much of importance from the standpoint of the pediatrician and the general practitioner. The use of electricity in the treatment of poliomyelitis has not been touched on. We have had no experience with electricity and have always thought that massage is much better, as being more easily controlled to prevent fatigue.

Floyd Clark and Andrew G. Daw, of Omaha, in a paper before the Section on Diseases of Children, at the session of the American Medical Association in June, 1924, report six cases of poliomyelitis, diagnosed early before the onset of paralysis, and treated with Rosenow's serum. All of these recovered without paralysis. They lay stress on rigidity of the neck as an important diagnostic sign and caution physicians to have the disease in mind from June to November. I have never used Rosenow's serum. Our cases are seen only after development of the paralysis. I would like to have the opinion of some of the pediatricians on this phase of the treatment.

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INTRACRANIAL HEMORRHAGE IN THE NEW-BORN.*

By ROGER H. DuBOSE, M. D., Roanoke, Virginia.

The occurrence of intracranial hemorrhage in the new-born is far more frequent than the average physician suspects. In recent years much light has been thrown on the subject of intracranial hemorrhage by various workers, as Holland, Saenger, Sharpe, and others.

Unfortunately, the majority of intracranial hemorrhages occur in a mild form; consequently, they remain unrecognized, survive, and later in life are classified as mental and physical defectives. The severe cases are usually recognized, but their chances to survive are lessened by the severity of the hemorrhage and the late diagnosis. Very few attending physicians give enough attention to the baby for the first few days of life. Frequent visits are made to the mother, but often the welfare of the baby is taken for granted.

It is my object in this paper to discuss the most generally accepted cause (birth traumatism) of intracranial hemorrhage, and not to elaborate on predisposing or contributory causes from various diseases, such as intoxication, congenital syphilis, hemophilia, prolonged coagulation time, etc.

The tentorium, as you know, is a partition originating from the dura mater, which separates the cerebrum from the cerebellum. The tentorium is the most common site of hemorrhage, according to Holland. The tears may be below or above the tentorium, but are most often below. Furthermore, they may be unilateral or bilateral, complete or incomplete. Holland states that the origin of the hemorrhage is in the tributaries of Galen's veins, received from the mid-brain and cerebellum, also from the cerebellar veins entering the straight sinus. During difficult labor much tension is made on these vessels, they become twisted by marked molding of the infant's head and rupture. Saenger states that the tentorial veins have no muscular or elastic fibres, while the cerebral veins possess that power of contractility and so may check hemorrhage.

The coagulation time is important in intracranial hemorrhage. Greuter found the coagulation time to be prolonged in 75 per cent of fifty-three infants having icterus neonatorum. Sherman, in a series of one hundred infants, found the bleeding time longer than five minutes in twenty-eight cases, and the coagulation was longer than twelve minutes in twelve cases. Cerebral hemorrhage occurred in one case. Coagulation time should be done, if possible, on all cases where there is suspicion or evidence of intracranial hemorrhage, especially if icterus neonatorum is present.

In nine cases of intracranial hemorrhage in the new-born that have come under my observation in the past two years, icterus neonatorum occurred in the majority.

The physical findings vary according to the size and seat of the hemorrhage. Hemorrhage below the tentorium, though of a mild degree, will be of more serious nature than a large hemorrhage above the tentorium. Bleeding below the tentorium produces much disturbance of the respiratory and vasomotor system.

*Read at the March, 1925, meeting of the Alleghany-Bath County Medical Society.

Marked depression and cyanosis are common. Bleeding which occurs above the tentorium cerebri usually causes much crying and screaming, bulging of the fontanels, nervousness, and convulsions.

Causes: Birth traumatism is generally accepted as being the cause of the majority of intracranial hemorrhages in the new-born, either from forceps delivery, rapid delivery from natural means, or artificially as from the use of pituitary extract. Last of all, breech delivery or versions are often the cause of intracranial hemorrhages.

I am not an obstetrician, but I dare to condemn any man who becomes impatient and resorts to artificial means to deliver an infant, without first giving nature a fair chance. I will admit that many infants are injured during normal spontaneous delivery, but undue haste in the use of forceps or pituitrin, and breech or version deliveries are responsible for a great number of serious injuries and even deaths. This procedure is often practiced by capable, well-informed men whose concern for the mother is admirable, but whose unconcern for the child is often tragic.

In eighty-one out of 167 fetuses dying during labor Holland found tears in the dura mater septa. Thirty-five out of the eighty-one were either breech or versions. He further states that 51 per cent of fetal deaths are due to complications of labor, and as a rule are due to hemorrhage. The tentorium cerebri was torn in 88 per cent of the dead fetuses after a normal breech delivery.

Cruickshank's investigations of 200 mature and 200 premature cases are interesting. In a series of 200 mature infants, hemorrhage of greater or less degree was present in 154 cases, or 77 per cent. In fifty-five cases of this number the hemorrhage consisted only of a capillary oozing. Had these been neglected, there would have been a gross hemorrhage in ninety-nine cases, approximately fifty per cent of the series.

Studies were made of 200 premature infants, born during the eighth to ninth lunar month of pregnancy. It was found that in 133 cases hemorrhage was present. In fifty-three of the premature infants, the bleeding did not amount to more than a capillary oozing, so that the gross hemorrhage in premature cases occurred in eighty-one cases, approximately 40 per cent of the whole. He further states that where a tentorial tear occurred in a mature infant, it was found that in 79 per cent of the cases the labor was abnormally long, while in 9 per cent it was precipitate. Furthermore, in 47 per cent of the mature cases, and 53 per cent of the premature cases where tentorial tears occurred, breech delivery had taken place.

I grant you that forceps and pituitrin in the hands of a competent obstetrician are of great value, but in the hands of a physician who is lacking in either judgment or ability, they are dangerous weapons so far as the life and morbidity of the infant is concerned.

Cerebral hemorrhage is far more frequently seen in breech and version deliveries than in any other common presentation. Haste to deliver the after-coming head by physical force often results in tears of the membrane; consequently, hemorrhage. In my opinion, the physician who practices version does nothing other than raise the infant mortality rate. One of our leading obstetricians in this state practices and advocates versions. It might be of interest to know that his infant mortality in 1921 varied between 12 and 17 per cent.

The diagnosis depends upon a complete history of the case, normal or abnormal labor, signs, symptoms and lumbar punctures. It has been my experience in four cases of intracranial hemorrhage that one lumbar puncture caused practically all the clinical signs and symptoms to disappear within five days. When clear bloody spinal fluid is withdrawn in any case, the hemorrhage is usually fresh. On the other hand, when a real dark bloody spinal fluid is withdrawn, it is indicative of an old hemorrhage. Therefore, an early diagnosis and lumbar puncture is essential as far as the life and morbidity of the infant is concerned.

The symptoms vary according to the location and size of the hemorrhage, also accccording to an early or late diagnosis. Hemorrhage of the mild form, seen early, is a much more difficult diagnosis than a large hemorrhage seen later.

In the mild form of intracranial hemorrhage, the symptoms and signs may be only slight, such as disinclination to nurse, yawning, or sighing, slow full pulse, nystagmus, normal temperature, drowsiness and shallow respiration. This same form may show signs and symptoms of a greater degree, such as screaming as if in pain, refusing food, marked

restlessness and muscular twitching of various parts of the body.

The severe form of intracranial hemorrhage is much more easily recognized because the signs and symptoms are more pronounced and severe. Marked depression of the respiratory and vasomotor systems is common. Cyanosis, muscular twitching, bulging of the fontanels, Cheyne-Stokes' respiration and rise in temperature are late and dangerous signs.

It is the mild form of intracranial hemorrhage which we most often overlook. Absorption takes place, and many cases survive, improving after the first five or ten days, later becoming normal, and never show any evidence of having had intracranial hemorrhage at birth. A much greater number than the average physician realizes remain normal physically and mentally until they reach the age of six to eight months of life, when the average infant should begin to sit up alone. The mother watches her child with great anxiety, and finally consults her family physician as to why her baby is backward. He will very likely refer her to some pediatrician, neurologist, or orthopedist, for treatment. The diagnosis of intracranial hemorrhage due to birth traumatism comes too late to be of any curative value, a sad state of affairs.

I do not mean to infer that intracranial hemorrhage is responsible for all mentally and physically defective children. I do maintain, however, that intracranial hemorrhage at birth is responsible for a much greater number than we can conceive. According to my records of ten cases past the age of twelve months that have come under my observation in the last two years, the majority were subjects of difficult labor. A history of breech delivery, use of forceps, or pituitrin was obtained.

Sharpe, in a series of 100 consecutive births, found bloody spinal fluid in 9 per cent. Five of these nine births were apparently normal. Likewise did the babies appear to be normal. They did not show any marked signs of intracranial hemorrhage. In four cases almost pure blood was withdrawn.

It is interesting to note that years ago, Little, of London, first stated that cerebral spastic paralysis in children was due to an early meningitis, as well as to an impairment of the nerve tissues, retarding development. Years later his opinion changed, stating that 75 per cent of such cases were due to intracranial hemorrhage at birth.

Treatment consists of repeated lumbar punctures daily, until the spinal fluid appears clear. The amount to be withdrawn at each tap varies according to the condition of the infant, as well as to the character of the fluid. Personally, I withdraw 2 to 10 c.c. Some authorities withdraw as high as 25 c.c. at one time, but I do not advise this. The injection of horse serum, or whole blood should be done in conjunction with lumbar puncture, especially in those cases where icterus neonatorum is present, in order that the coagulation time should be shortened if necessary. Sedatives, such as sodium bromide and chloral hydrate, have been of some value in controlling the nervous symptoms. I usually use five to eight grains of bromide, and two to three grains of chloral, given by rectum in a two ounce mixture of mucilage of acacia through a catheter inserted seven to nine inches. If the infant can swallow, three to five grains of sodium bromide, well diluted in water, will be of value. Morphin should not be given.

Report of Cases

Case 1.—Baby C., seen at 6:30 P. M., four days after birth at home. Premature eight months baby; icterus neonatorum present; temperature 101; refused food; fontanels depressed; pulse full and slow. Respiration rapid and very shallow; depressed and drowsy; cried out at intervals, as if in pain; pronounced muscular twitching of eyes and mouth; cyanosis marked; Cheyne-Stokes' respiration.

Diagnosis of suspected intracranial hemorrhage. Lumbar puncture done and 7 c.c. of almost pure dark bloody spinal fluid withdrawn, not under pressure. Diagnosis confirmed. Nurses stated that muscular twitching began twenty-four hours after birth. Baby died at 10:45 the same evening.

Mother, age twenty-five; primipara; labor began at 1:30 A. M.; delivered at 4:30 A. M.; in labor three hours. Pituitrin given; quantity unknown. Mother appeared to be comfortable on the fourth day after delivery, other than depressed.

Case 2.—Baby H., seen forty-eight hours after birth in hospital; full term infant; temperature 102.2; pulse slow and full; respiration shallow and rapid, 80; jaundice; muscular

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twitching left side of body, especially face, eye and arm; muscular tensions prominent; crying at times as if in pain; refused food; meconium stools; urine blood stained; fontanels not bulging; cyanosis only slight.

Diagnosis was suspicious of intracranial hemorhage. Lumbar punctures done and 9 c.c. dark bloody spinal fluid withdrawn under pressure. Diagnosis confirmed. Crying, muscular twitching and muscular tension disappeared promptly; respiration became slow and deeper. Baby slept for six hours; took nourishment very well; twelve hours later slight muscular twitching of eye and left side of face observed. Second lumbar puncture advised but attending physician objected, thinking it unnecessary since the improvement had already been so marked. Muscular twitching continued for three days, then disappeared. The baby was discharged with the mother ten days later, apparently normal. Today, at the age of eleven months, the child is apparently normal.

Mother, age twenty-four; multipara; lost first baby at birth; cause unknown. Labor began at 10 A. M. and delivered at 10:45 P. M. the same day; normal presentation. One minim doses of pituitrin given every hour for five hours; four minims given before entering delivery room. No lacerations reported. Five minims given to control bleeding.

Case 3.—Baby Mc., seen in hospital twenty-eight hours after birth; full term infant; temperature normal; pulse full and slow; respiration shallow and rapid; marked muscular twitching of eyes and face; screaming as if in pain; refused food; meconium stools; fontanels not bulging; no cyanosis; no jaundice, 10 c.c. dark bloody spinal fluid withdrawn under slight pressure; muscular twitching relaxed; crying ceased; slight muscular twitching of face and eyes continued; second lumbar puncture attempted twenty-four hours later; failed to enter the canal; baby continued to improve; took breast greedily; attending physician objected to third lumbar puncture; muscular twitching of eyes and face continued for seventy-two hours and disappeared. Baby was discharged with mother ten days later, apparently normal. Today the baby is six months of age, normal weight, and appears to be normal physically and mentally in every respect.

Mother, age thirty-two; primipara; normal presentation; labor began late one afternoon, delivered the following afternoon; in labor twenty-four hours; ½ c.c. of pituitrin given every hour for four hours; 1 c.c. given before entering the delivery room; high forceps applied; second degree laceration, repaired. Discharged from hospital ten days later in good condition.

Conclusions

1. Birth traumatism is the most generally accepted cause of intracranial hemorrhage in the new-born.
2. Tears occur most often in the tentorium.
3. Intracranial hemorrhage occurs more often in breech or version deliveries than in any other common presentation.
4. The mild form of intracranial hemorrhage is most often overlooked.
5. Coagulation time should be done on all cases of suspected intracranial hemorrhage, especially in those cases where icterus neonatorum is present.
6. Lumbar puncture is most valuable from a diagnostic standpoint, as well as a curative procedure.
7. Intracranial hemorrhage is responsible for a greater number of physically and mentally defective children than we can conceive.

Anchor Building.

HEMORRHAGE DURING THE LATTER MONTHS OF PREGNANCY AND LABOR.*

By C. J. ANDREWS, M. D., F. A. C. S., Norfolk, Va.

Perhaps no single symptom or occurrence during the latter months of pregnancy has greater significance than the appearance of hemorrhage. It is caused by one of two conditions—placenta previa or ablatio placenta. These conditions have been giving trouble from time immemorial, but it is interesting to note that Rigby, 1776, clearly described its mode of production, differentiating between hemorrhage due to premature separation of placenta and that due to placenta previa, and designated the former as accidental, and the latter unavoidable hemorrhage. Holmes, of Chicago, 1901, proposed that premature separation of the placenta be designated as abruptio placenta. Although we are more familiar with

*Read before the Southside Virginia Medical Association, in Norfolk, March 10, 1925.

placenta previa, Polak and Williams believe that ablatio placenta is more frequent.

A painless, causeless hemorrhage before delivery is presumably due to placenta previa. So surely is this true that this working diagnosis may be made without an examination; in fact, it is highly desirable that no examination be made until the patient is fully prepared and the operator is ready to proceed with such treatment as is chosen. It is to be remembered that sepsis often follows placenta previa. This has been attributed to the fact that the placental site with open sinuses is closer to the infected vaginal tract. Hasty examination through an unprepared field would be expected to be a more potent cause.

The choice of treatment will depend upon several conditions. Fortunately most of these cases are multipara, and have a fair degree of dilatation when seen. With two or more fingers' dilatation and a living child, the choice would be packing (Polak, McPherson) or bag. If packing is to be used, it must be very thorough, filling the cervix and vagina, in fact, really packing the pelvis. This operation is greatly facilitated by having at hand packing prepared in a glass tube about ten or twelve inches long by two inches wide, large enough to hold a strip of gauze packing two inches wide, four-ply, and ten yards long. The open end of this tube is held over the vulva and the operation performed without touching the packing with the hands. If the bag is chosen, one should be used large enough to make sufficient dilatation to permit delivery. The operator should not leave the patient after the bag is inserted, as violent or fatal hemorrhage may follow its expulsion from the cervix unless the operator is ready to rupture the membranes, or deliver by version or forceps.

Braxton Hicks version is used by many for this type of case, leaving the breech to stop flow and be delivered spontaneously. This gives poor outlook for the baby.

The bag may be placed inside the sac, or extra ovular. The extra ovular application has been, in my hands, very satisfactory in controlling hemorrhages. In some cases rupture of membranes may be all that is needed. If the dilatation is sufficient, immediate delivery by version or forceps may be satisfactory.

If the cervix is rigid and long, the choice is between Cesarean and packing. Cesarean usually offers the best prospects if the patient's condition is good, and would offer much better chances for the baby.

Transfusion is invaluable in tiding over the tragic cases. In very rare instances the first hemorrhage from placenta previa may be severe or fatal, but in practically all cases the hemorrhage, like the rattlesnake, gives fair warning. There are several small hemorrhages first. If these warnings are not disregarded by the patient or attendant, very few will become tragic.

Premature separation of the placenta, or abruptio placenta, may cause a hemorrhage, which is concealed or external.

Holmes found the hemorrhage to be external in 193 of a series of 306 cases.

Ablatio placenta cases may be conveniently placed in three groups. The first is the traumatic, which is asociated with the history of a blow or injury of some kind, and possibly torsion of the uterus. The second is the mildly toxic case with numerous infarcts in the placenta. In both of these the blood collects beneath the placenta until it tunnels its way to the open cervix. The third class is the so-called utero-placental apoplexy. In these cases, not only is the placenta separated from the uterine wall by the bleeding, but the whole uterine wall is infiltrated with blood and the peritoneal cavity contains bloody serum, the uterus presenting a dark appearance. These are associated with severe toxic symptoms.

After an extensive study of this subject, Watson concludes that utero-placental apoplexy is caused by the inundation of the uterine wall with a toxin of the nature of a hemorrhagin liberated from the placenta, and naturally producing its maximum effect at the side of its absorption and greatest concentration. This toxin has been likened to snake venom. The symptoms vary with the different conditions. The first two classes give symptoms of hemorrhage, either concealed or external, pain in the uterus, and rigidity in 20 per cent of cases.

Utero-placental apoplexy gives these, and, in addition, constant board-like rigidity of uterus and symptoms and history of toxemia.

Progressive distention of uterus is common to all. Falling hemoglobin also indicates progress of hemorrhage.

The treatment indicated depends upon the type and severity of the case. The mild cases of the first two classes may be treated by mor-

phine, tight binder, and packing of cervix or use of bag to induce labor, or even rupture of membranes.

If the hemorrhage progresses, hysterotomy with coincident blood transfusion offers the best prospect of relief. The cases of utero-placental apoplexy will usually fall in this class. The uterus contracts poorly, and is even in danger of rupture. Induction of labor does not promise much. Even if the foetus is delivered, the uterus contracts so poorly that hemorrhage often continues.

Hysterotomy not only gives prompt help, but gives opportunity of observing the condition of the uterus. If it has no power of contraction, hysterectomy may be done; otherwise, a classical Cesarean or low flap operation, as may be indicated, will be necessary.

The final result in these cases will depend more upon a prompt diagnosis than upon the method of treatment selected.

The following cases illustrate several types of these conditions:

Case 1.—Primipara, age twenty-two, seven and one-half months pregnant. This patient had very severe vomiting of pregnancy during the early months. Following this there was irregular vaginal bleeding for a week or more. The blood pressure was elevated during the whole pregnancy. At seven and one-half months patient had a sharp hemorrhage, and had evidently lost a pint or more of blood when seen, though bleeding was not very active at this time. Patient was removed to the hospital and, after usual preparation, examination showed placenta partially covering cervix. Os was about two fingers dilated. A No. 5 Voorhees' bag was placed extra ovular, and a two pound weight attached. There was no further bleeding. After about three hours the bag was expelled, the membranes were ruptured, and the head appeared at vulva in about ten minutes, delivery occurring normally. The placenta showed a number of infarcts. The baby's heart was not beating when delivered. The patient had evidently had a toxic separation of placenta, as well as placenta previa. This, with prematurity, accounted for the stillbirth.

Case 2.—Primapara, age thirty, full term pregnancy. This patient also had shown some toxic symptoms during the four weeks preceding, such as elevation of blood pressure, small amount of albumin and oedema. The first hemorrhage was not severe, possibly not more than one-half pint. After patient was removed to the hospital and prepared, she was found to have a rather tight cervix, admitting only one finger. The placenta covered the cervix. The baby's heart sounds were normal. A Cesarean operation was done with satisfactory results. The baby was in good condition.

Case 3.—Patient was seen in consultation. Patient, a primipara, gave the history of recent toxemia. She appeared to be very ill. The abdomen was distended, the uterus board-like and very tender to touch. There had been considerable irregular pain in abdomen for several hours, but no definite contractions. No foetal parts could be palpated, and no heart sounds. There was no external bleeding. The cervix was thick and two fingers dilated. No placenta could be felt with examining hand. A Cesarean was done. The uterus was found to be dark in color. The peritoneal cavity contained much bloody serum. Hysterotomy was done in the usual way, and a dead foetus removed. The placenta was partly detached and separated from the uterine wall by large dark clots. The whole uterine wall was infiltrated with blood. This patient recovered.

Case 4.—Patient, a secundipara, full term. This patient, when first seen, had been bleeding irregularly for about two days, and had irregular labor pains during most of this time. The placenta covered the whole cervix. Bleeding was quite active when examination was made. A No. 5 Voorhees' bag was inserted extra ovular. This controlled the hemorrhage. After about two hours the dilatation was complete. The blood pressure was 110-70, pulse 110, and patient appeared to be in fair condition. A version was done and the baby delivered easily without any further loss of blood.

Unfortunately, just before the completion of delivery the anesthetist announced that the pulse had suddenly stopped. This may have been an anesthetic death, but most likely it was the result of the continued small hemorrhages. If we had properly estimated this loss and given a blood transfusion, the prospects would certainly have been better.

Medical Arts Building.

When you wake up at dawn and can't go to sleep again it's a sure sign it's a holiday.—*Selected.*

THE TREATMENT OF EPIDIDYMITIS BY DIATHERMY.*

By W. W. S. BUTLER, Jr., M. D., Roanoke, Va.

Epididymitis of gonorrhoeal origin is of such frequent occurrence and so nearly always in men in active work, that it becomes of considerable economic importance. In dispensary cases, the incidence is estimated at from 20 to 30 per cent. In diathermy, we have a method which will reduce this loss in time easily by one-half and will produce partial or complete relief of pain at once. Corbus and O'Conner, of Chicago, entitle their article on this subject, "A Specific in Epididymitis." And Walther and Peacock report remarkable results. My own experience in the past few months limited to seventeen cases, has been very satisfactory.

This is essentially a use of heat, and we have a means to apply nature's remedy, "fever," at a definite area deep in the tissue. The heated blood causes absorption of the products of infection, probably by an increased phagocytosis; it relieves congestion and by increased tissue drainage gives marked relief from pain, in addition to the bactericidal effect of heat on the gonococci. The effects of heat, and how it works, need not be discussed.

The faculty of placing heat at a distance, as a lens would focus light, gives this method its value. With two equal sized electrodes in a mass of tissue the hottest point is half-way between them, and as either electrode is reduced in size, the point of maximum heat is brought nearer it. Where a large electrode is used for one pole, the heat is thrown so much nearer the small one that the former is called the indifferent, the latter, the active electrode. For heat used for its bactericidal and stimulative effects, the term medical diathermy is used. The temperature can be satisfactorily estimated by the sensations of the patient, i. e., a current just below the point of discomfort. A hot wire ammeter registers the current but gives only an approximate idea of the temperature, because this depends on the area of distribution of the current and the uniformity in resistance of the medium. If the ordinary direct current were used to produce this heat, the pain at the point of contact would so limit the amount used that no appreciable effect would be gotten. Or, if the usual alternating current were used, it would produce muscular contractions. In 1890, D'Arsonval, of Paris, reported that if a current be reversed over 3,000 times per second, muscular contractions were diminished, and the following year he passed 3,000 milliamperes through his body without any sensation except that of heat. With the modern machine, using a system of condensers, an alternation as high as a million per second is produced, and, further, by some highly technical device, the volume of current is sustained at this high frequency.

For surgical uses, the active electrode may be reduced to a point causing immediate coagulation; here the term fulguration is used. Between this and the medical diathermy there is a degree of heat which produces necrosis not immediately, but sometime later, allowing nature time to wall off the area to be destroyed. For this the term surgical diathermy is applied.

In addition to the tissue reactions to heat, we have the peculiar susceptibility of the gonococcus to heat. The spontaneous cures following a severe epididymitis or prostatitis, or in acute respiratory infections exemplify this. The organism grows so poorly in artificial media that its ready susceptibility to a slight rise in temperature does not make a fair comparison. Where the infection has been inoculated in the joints of dogs, those joints treated by diathermy contained sterile fluid, while the others showed the living organism. An exposure at 104° F. for six hours, or 108° F. for three minutes, will destroy gonococci where they can be localized in the tissue. A normal epithelial cell will withstand 118° for an hour, though germinal epithelium is said to have very little heat resistance. In infections from mumps and from infected bladders, there is some relief from pain but none of these are included in this series.

The question of possible injury to the gland is a very important one. Sterility in the male of gonorrhoeal origin is due to obstruction of the vas, and in diathermy, by allaying the inflammation and shortening the course of the disease, we lessen the amount of fibrous tissue and consequent obstruction of the vas. The condition in the posterior urethra remains and there is an equal probability of infection of the same or opposite epididymis as before. This occasional recurrence shows that the vas is open, whereas a procedure which allows no recurrences would have a high per cent of sterility. Another possible cause of sterility would be a direct injury of the germinal epi-

*Read before the Southwestern Virginia Medical Society, at Pulaski, Va., March 26-27, 1925.

thelium. C. R. Moore, of Chicago, in his experimental work to determine the effect of heat on the germinal epithelium, reports that water heated to 116° F. for ten minutes produces destructive changes in the germinal epithelium, and that these changes are in direct proportion to the distance from the source of heat. In diathermy, the heat is more evenly distributed through the gland and it hardly seems probable that a destructive change would occur without some pain to the patient. The occurrence of sterility following gonorrhoea is discussed in Cabot's Urology. Of gonorrhoeal patients whose records were obtained for five years, 10 per cent of marriages were sterile, 25 per cent in unilateral epididymitis patients and 41 per cent in those with bilateral epididymitis.

In applying diathermy, I have followed the method recommended by Corbus and O'Conner. They have devised a clamp of fibre which holds the two concave metal electrodes on each side of the testis. The skin is shaved and moistened with 25 per cent glycerin to prevent drying and subsequent heating effect in the skin. A current of 600 to 1,000 milliamperes is used for an hour and is kept just below the point of discomfort, *i. e.*, below being too hot or aching. This method proved more satisfactory than the mesh electrode moistened with lather and wrapped in oil silk.

In a group of fifteen cases there has been relief of pain in every instance for several hours, and improvement has continued from the first treatment. The time under treatment varied from one to four days. In the first man treated, the relief was immediate and he returned to work at once, but on the fourth day he had a recurrence on opposite side. Since the same conditions continue in the posterior urethra, recurrences in the same or opposite side must be expected. Each remaining patient has been advised to avoid active exercise from two to four days. Eight complained of severe pain all of the preceding night, and when seen the following morning, reported such relief that they had a good night's rest. Only one man was treated on the first day of pain and swelling. The symptoms immediately began to improve and no time was lost from work.

This procedure has the advantage that there is no pain while being administered and no harm can be done, and you can almost promise immediate relief of pain in addition to the saving in time. *Shenandoah Life Building.*

SYPHILIS OF THE LUNGS—REPORT OF TWO CASES.*

By CHARLES R. GRANDY, M. D., Norfolk, Va.

In giving you what is really a report of what I think to be two cases of pulmonary syphilis, I am not going into any exhaustive account of this condition, which can be found in various articles, notably in one published by C. P. Howard in the *American Journal of Syphilis* of January, 1924, which also gives an extensive bibliography. But I am merely going to give you a short introduction and then present two cases for your consideration, feeling that any evidence which can be presented may aid in clarifying this obscure, though quite widely discussed affection.

Before the discovery of the tubercle bacillus by Koch, it was quite usual to make diagnosis of pulmonary syphilis, for what was more natural than to attribute to syphilis a lung condition which accompanied various other manifestations of this disease. But a more general use of the microscope soon showed that most of the cases diagnosed pulmonary syphilis were really due to the tubercle bacillus and writers began to contend that there was no such thing as pulmonary syphilis.

The discovery of the spirochete and of the Wassermann reaction revived the interest in this condition, for it was felt that we could now obtain positive microscopic proof in favor of the syphilitic infection, which would offset the negative proof presented by finding the tubercle bacillus in the sputum. This expectation (expressed by so great a man as Osler) has, however, not been realized for in most cases we have merely found evidence of the presence of the two diseases in one person.

Careful postmortem examinations have nevertheless found undoubted cases of syphilis of the lungs, though even here the differentiation is so difficult that Carrera concludes his article with the statement, "The diagnosis of pulmonary syphilis must be made microscopically." On one hand we have the lesion due to a chronic fibroid tuberculosis and on the other the hypostatic pneumonia and brown induration due to a failing heart, which may itself be the result of a luetic infection, all of which can be easily confused with the lung lesion described as the result of syphilis. With an affection which presents such great difficulties even to the pathologist on postmortem it is not re-

*Read at a meeting of the Norfolk County Medical Society, April 20, 1925.

markable that there are now few clinicians who will dare to make a positive diagnosis of pulmonary syphilis from the symptoms of the patient.

There is indeed nothing especially characteristic in the symptoms given for pulmonary syphilis though H. G. Carter says, "We did note that in advanced lesions symptoms were less severe than would be expected from similar tuberculous lesions." Cough seems to be invariably present in cases with enough pathology to be diagnosed. It is naturally worse in cases accompanied by bronchiectasis and except in this last condition the sputum is scantier than in tuberculosis.

Haemoptysis frequently occurs. Hoarseness and dyspnoea seem more marked than in tuberculosis, while fever seems to run lower and night sweats to be rare. Loss of weight is not constant, but may be marked. You see there is nothing in these symptoms to distinguish such a case from a chronic fibroid tuberculosis.

The physical signs likewise are not characteristic and can be found in both upper and lower lobes. There may be very marked as in the cases reported by C. P. Howard, which showed large gummatous or sclerotic lesions on autopsy, but naturally may be of lesser extent. There also seems to be nothing pathognomonic in the X-ray pictures, though some Roentgenologists, like Watkins, claim to be able to make the diagnosis.

In spite of this, C. P. Howard says there are now over two hundred clinical cases, which are well enough differentiated to be accepted as true cases of pulmonary syphilis. To make this diagnosis, after having excluded lung abscess, b r o n c h i e c t a s i s, and a localized empyema, he says that you must have:

(1). A constantly negative sputum for the tubercle bacillus.

(2). The presence of the sigmata of a sphilitic infection.

(3). A markedly positive Wassermann.

(4). A therapeutic test by anti-syphilitic treatment.

H. G. Carter depends largely on this last for his diagnosis, while Howard's case reports certainly do not show very brilliant results from treatment. He, however, was fortunate (?) enough to get four autopsies, two of which took exhaustive special study to confirm the diagnosis.

The Negro race, which is unusually subject to both tuberculosis and syphilis, naturally offers a fruitful field in which to make a differential diagnosis. But while we find many cases of lung infection in Negroes with a strongly positive Wassermann, in most of these cases the tubercle bacillus is also to be found and the lung lesions are really the result of the latter. Still we do pick up cases, which after long observation we feel are probably cases of pulmonary syphilis, but this is about as far as the writer has dared go.

Dr. H. G. Carter, of Piedmont Sanatorium, writes me that he has had five such cases in fifteen hundred admissions. I sent him one of these cases, though I failed to diagnose it. So I will present it and one other case to you for your consideration.

The patient, who was first seen at our clinic on April 8, 1924, is a colored woman of thirty-eight, who gives no family history of tuberculosis, but who had nursed a patient with this disease seven or eight years ago. She has had the ordinary childhood diseases and influenza in 1918. She has one living child and has lost one, but gives no history of miscarriages. Her present attack has lasted two months, and she was quite sick at first. She has a cough with thick, white sputum, but has had no haemoptysis. She gets cold easily but has had no night sweats. She has some dyspnoea on exertion and has lost strength. Her appetite is poor and she is frequently nauseated but her bowels are regular. She has lost weight and her temperature when first seen was 99.6 degrees and pulse 80—the highest temperature we have found in this case. Her sputum was negative for tuberculosis; her Wassermann 4 plus. Signs of slight consolidation with numerous moist rales were found over right upper lobe front and back with similar but lesser findings in the left lobe. As the patient desired sanatorium treatment, her application was immediately sent to Piedmont Sanatorium, to which she was admitted about May. She did very well at the Sanatorium where she had a course of salvarsan. Dr. Carter wrote me, "This patient left here on July 3rd, as an improved case. She did not show positive sputum throughout her stay, but did show positive Wassermann. X-ray examination showed a mottling, that is not apparently characteristic of pulmonary tuberculosis." She was referred to Dr. Gill's clinic for anti-syphilitic treatment. On November 11th, she looked and felt well and had

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no cough. She was referred for X-ray to Dr. Magruder, who reports as follows: "There is marked peri-bronchial thickening throughout the upper lobes of both lungs, believed to be due to tuberculous infection. There is some fibrosis indicating good resistance. No gross pathology." I sent the films to Dr. Carter, who in turn sent them to Dr. Lawrason Brown, who writes, "It is exceedingly difficult from what I know to make a diagnosis of syphilis of the lung. Mr. Sampson and I went over the series of films, which you sent, a couple of times and we have come to the conclusion that on the right side there was a definite pathological change radiating from the root into the lower half or two-thirds of the lung. This was more pronounced in the first films, as on later films it has somewhat cleared up. The change suggested to us at first that of tuberculosis, but its location and one or two characteristics are such that a non-tuberculous process can not be excluded. There were no changes to be noted on the left side."

Here then we have a case with a positive Wassermann, sputum negative for tuberculosis on repeated examinations who has done very well on anti-syphilitic treatment, but who showed none of the stigmata of visceral syphilis—thus presenting three of the four diagnostic points given by Howard. It certainly looks like a case of pulmonary syphilis and I am extremely thankful to Carter for making the diagnosis for me. I will be very much interested in watching the final outcome in this case for Negro tuberculosis cases, who do well at the Sanatorium, relapse much more frequently than similar white cases, while a case of pulmonary syphilis certainly ought not to do so.

My second case is a very different type who, strange to say, was first seen on the same day as the other case. This patient is a hod carrier of forty-nine, who was born in Portugal. Was referred to the tuberculosis clinic from St. Vincent's clinic by Dr. Morgan as a case of "chronic pharyngitis and tuberculous laryngitis." This man spoke very poor English which, along with marked aphonia, made him give a very unsatisfactory history. There was no family history of tuberculosis and no known contact with it. He likewise did not remember being sick before this attack, which only dated back six weeks. His chief complaint is pain in the neck and throat which kept him from swallowing any solid food, though his appetite was good. He has a slight cough with white sputum, but gives no history of haemoptysis, of night sweats or of dyspnoea. He has lost strength and flesh but does not know his usual weight. Examination shows an emaciated man, who is very hoarse and almost aphonic, and has a badly ulcerated pharynx, which is considered to be probably due to a double infection with syphilis as well as tuberculosis. Lung examination shows slight dullness with BV breathing and moist rales in both upper and right middle lobes. He was reported as a case of pulmonary and laryngeal tuberculosis with an exceedingly bad prognosis, for he looked as if he would only last a few weeks. His blood gave a 4 plus Wassermann but his sputum was negative for tubercle bacilli. On first examination he weighed 106 lbs., his temperature was 97.6, and pulse 76. His throat was swabbed with 3% formalydehyde in glycerine and he was given Tr. iodine (M III) in a teaspoonful of castor oil three or four times a day.

One week later he only weighs 102 lbs., but his throat looks better; he still can not swallow solid food and liquids regurgitate.

On April 29th, his weight and general condition are the same but his throat looks better and cough is better.

On May 20th, he is able to eat a soft egg, his weight has increased to 103 lbs., and his cough is almost well. He is sent to the venereal disease clinic for salvarsan while the other treatment is continued at our clinic.

On June 3rd, his throat feels better and he now weighs 112 lbs.

On July 8th, he weighs 115 lbs. He has had five injections of salvarsan, his throat is no longer painful and he is no longer hoarse. Physical examination shows some dullness and increased breathing over both upper lobes with some fine rales in left upper. Pharynx is recorded as healing. (The iodine and castor oil was discontinued but had to be started again in two weeks on account of the return of his cough and painful swallowing).

Our notes show that he continued about the same, going up and down till October 24th. when physical examination revealed no moisture in lungs.

On December 6th, he is feeling generally better and swallows pretty well. He is sent to Dr. Magruder for X-ray examination which

is reported as showing, "No X-ray evidence of pathology in lungs or vascular structures."

On December 20th, his last visit to clinic, he weighs 117 lbs., he feels better and swallows better and is able to return to his work. His temperature has never been up to 100 at any visit to our clinic while it has usually been below 99 and his pulse has only once been above 80, going once down to 64.

Whether his lung signs were due to syphilis is difficult to decide. I thought at first they were due to tuberculosis, but if this emaciated Negro had had tuberculosis as well as syphilis, he would have been dead long ago, and his X-ray films would also have shown the results of tuberculosis.

This case measures up pretty well with Howard's four criteria. He had the stigmata of syphilis (in pharynx).

He had a markedly positive Wassermann.

His sputum was negative for tubercle bacilli, but this examination should have been repeated oftener. This was not done because our sputum examinations had been so unsatisfactory that we had gotten to paying little or no attention to a negative report, if the signs and symptoms of tuberculosis were present. From outward appearance, the passer-by would have diagnosed this man as a hopelessly advanced case of tuberculosis, and it was only the response of the disease to anti-syphilitic treatment that convinced me that I was handling a case of lues uncomplicated with tuberculosis.

In the colored race there are undoubtedly many cases of combined syphilis and tuberculosis of the lungs, as well as many uncomplicated cases of tuberculosis. There seem also to be a certain number of uncomplicated cases of syphilis of the lungs. How frequently these cases occur still remains to be determined, though Carter has found one-third of one per cent in his sanatorium, which is naturally far greater than that found in a white sanatorium. I know that he is going to continue his search for these cases, but feel that the subject needs a more general attention on the part of Southern clinicians who should also publish their cases in order to throw more light on this obscure problem.

Bank of Commerce Building.

THE DIAGNOSIS AND MEDICAL TREATMENT OF TOXIC GOITER.*

By JAMES H. SMITH, M. D., Richmond, Va.

The diagnosis of a classical case of toxic goiter can be made at a glance, and until a year or so ago there was no medical treatment worthy of the name. We may, therefore, devote our time chiefly to the diagnosis of the mild or borderline case of toxic goiter, and to the very recent advance in medical treatment through iodin therapy.

For the present, in our practical work, I think we will do well to keep to the idea that we know no toxic goiter other than such as is associated with increased thyroid function as expressed in an elevated basal metabolic rate, and even within this strict definition, to emphasize that the rate as experimentally determined, shall be a true basal rate. I hold to this proposition knowing that such an authority as Crile does not regard increased metabolism as essential to the diagnosis. I do not wish to be understood as asserting that a metabolism test is necessary to the diagnosis of toxic goiter, but I should be unwilling to make the diagnosis unless I believed that the test, if done, would show an elevated rate. I am, therefore, in opposition to the doctrine of hyperthyroidism or toxic goiter with a normal basal metabolic rate.

Another idea has been advanced which I think clinicians, for the present, should reject as leading to unsafe practice. Lieb, Hyman and Kessel have quite recently published a great deal of matter on the thyroid. They reported eighty-six cases "with many or even all of the classical symptoms of the text-book picture of exophthalmic goiter," with a normal metabolism, and who "did not suffer from that disease." No one will deny that frequently we see cases with many of the classical symptoms of exophthalmic goiter, having normal metabolism and not suffering fom thyroid disease. With this part of the statement we have no difference. We can imagine also a rare instance of a fortuitous chain of circumstances that might result in all the classical symptoms, due to a combination of causes other than thyroidal in nature. But I think a dangerous and unwelcome diagnostic snare is set for unwary feet to combine the words "many" and "all," and apply them to a group of eighty-

*Read at the meeting of the South Piedmont Medical Society, at South Boston, Va., April 21, 1925.

six cases seen in the experience of one group of writers.

Like other laboratory procedures, the basal metabolism test should be looked upon as confirmatory of clinical study and not as the source of authoritative decree. Though personally an enthusiastic follower of its uses, I believe its merits are now generally appreciated, and its limitations are more in need of emphasis. Recall the factors that enter into its determination.

The patient is supposed to be in the post-absorptive stage as regards the taking of food.

Muscular effort is minimized as far as may be possible.

All disturbing psychic and environmental influences are shut off in theory, but the patient's psyche is largely under her own control if under anyone's, and if saliva trickles down her throat and sets up an impulse to cough, this for the time being dominates her environment. She may be apprehensive of a test strange to her, or if it is not her first experience with it, her recollections may be full of a seeming horror.

The patient's temperature is believed to modify her metabolic rate approximately ten points for each one degree centigrade of body temperature. What should be her exact normal body temperature?

The volume of gasses varies with temperature and barometric pressure, and with some other factors, such as water vapor, the last not usually being taken into account.

The patient is supposed normally to consume so much oxygen per square meter of body surface. Her body surface is arrived at by curves worked out on the basis of height and weight. This necessarily is only approximate.

The caloric value assigned to oxygen is an average of its heat producing power in combination with the various food principles.

Females are accepted to have a normal rate about 7 per cent slower than males. It can be only very roughly true.

The rate slows with age. Without doubt it does in the average, but some women are old at thirty and others young at fifty.

The net result of the test is expressed as a definite figure. The variables introduced into the calculation make it necessary to adopt a quite wide range as the normal, and this usually is fixed at minus ten to plus ten. It is really remarkable that a normal can be arrived at.

I have gone at length into what may appear hypercritical analysis in order to formulate an objection to a claim sometimes advanced that it is in the borderline case that the basal metabolic rate is most useful. I do not think so. A borderline reading on the plus side, if associated with a borderline clinical picture, may properly leave the clinician in a borderline state of mind, which, it seems, is what the interests of the patient demand for the time being. Such a rate, because outside the prescribed limits for normal, does not set up a positive diagnosis in the sense that finding a few tubercle bacilli or tapeworm eggs does. On the plus side we should think in terms of tens, not of ones. For at least two reasons more latitude must be allowed on the plus side than on the minus: (1) the scale of abnormal range is greater on the plus side. A very high rate would be plus 100; a very low rate would be minus forty. (2) The most frequent sources of error are toward the plus side. As Means and Burgess put it: "The finding of normal rates in persons suspected of having hyperthyroidism practically rules that condition out, but the finding of an elevated rate does not necessarily rule it in." In line with what seems to be their experience, I think in our series of tests the chief usefulness of the method has been in eliminating suspected thyroid hyperactivity. Very rarely should any advice be given the patient looking to a reduction of thyroid activity on the basis of the metabolic rate, other than would be given without it. To put it differently, I should be unwilling to endorse a report of any plus figure without seeing the patient, but would usually accept a low or normal figure from any reliable technician who could guarantee against mathematical errors.

I have spoken at length of the limitations of the metabolism test, especially in the diagnosis of mild cases of toxic goiter. I can more briefly declare my great faith in its helpfulness when the test is carried out with due consciousness of its liability to error, and when consistent results can be successively shown through repeated tests in a given case.

Let us turn now to consider what clinical or bedside evidence is necessary for a reasonable diagnosis of toxic goiter as the essential condition requiring treatment.

First, to speak negatively: A patient with any manifest disease, such as diabetes, myo-

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cardial degeneration or chronic nephritis, marked anemia or leukemia, must be looked upon as an impure problem in thyroid diagnostics, and the patient studied as a whole rather than as the subject primarily of an endocrine disturbance.

If pulmonary tuberculosis exists, apparent mild hyperthyroidism should be regarded with skepticism or considered to be the effect of the pulmonary infection, and treatment of the lung condition given first place.

If definite chronic focal infection is present, especially in the upper respiratory tract or teeth, a mild hyperthyroidism is at times completely and permanently relieved by surgical removal of the infection.

With these reservations, and omitting such inconclusive symptoms as sweating, vasomotor flushes, digestive symptoms and the like, there are six symptoms and signs which are to be noted as present or absent when the diagnosis of toxic goiter is under consideration. I shall number them serially in order to make a rather fanciful use of the numerals.

(1) Nervousness; (2) Tremor; (3) Loss of weight; (4) Increased pulse rate; (5) Exophthalmos and other eye signs; (6) Goiter.

To define more accurately the use of these terms: As is well known, the significance of thyroid enlargement does not vary directly with its size, but rather with its associated symptoms. The exophthalmos of toxic goiter is usually easy to distinguish from a normal even though exaggerated prominence of the eye-ball, and is confirmed by the presence of the Stelwag, von Graefe and Moebius signs. The term tachycardia will arbitrarily be used to refer to a pulse rate usually over 100 and not falling below 90 even under the basal conditions of the test. Nervousness and tremor are necessarily somewhat vague terms, but by loss of weight is meant something more than 5 per cent of the recent normal body weight.

Nervousness, tremor and loss of weight manifestly are insufficient for the diagnosis of toxic goiter, nor do I think the addition of tachycardia suffices in the absence both of eye signs and goiter. I doubt whether basal metabolism determinations have helped to establish as practical truth, that exophthalmic goiter may exist without either goiter or exophthalmos.

On the other hand, given goiter, the addition of almost any two, or at most three, of the other symptoms, is usually confirmed by the basal metabolic rate as indicating thyroid overactivity.

I believe, then, it is roughly true to say that the symptoms listed may be assigned values corresponding to their numerical order, and that the diagnosis of toxic goiter approaches certainty as the sum of these values exceeds ten. Nervousness, (1); tremor, (2); loss of weight, (3) and tachycardia, (4) would just equal ten: the addition of exophthalmos (5) would give fifteen, and of goiter (6) the full total of twenty-one. The basal metabolic rate should be used when possible to confirm the impression. One hundred cases analyzed in 1922 accorded quite well with the rough rule just given, the metabolic rate used as a criterion, and while no detailed analysis has been made since, the series now numbers approximately 450, and the impression gained in the earlier cases still holds. As for a ratio between the metabolic rate and clinical symptoms, the pulse rate will be found to bear a direct proportion to the metabolic rate much more constantly than will any other symptom or sign.

Therapeutic considerations now make it necessary to distinguish the two great types of toxic goiter, exophthalmic goiter and toxic adenoma, with greater care than formerly. I am not sure that it can always be done with certainty, nor, indeed, that the two types of pathology are not sometimes mixed in a single thyroid gland so as to make the differentiation impossible. However, the main considerations are that adenoma is a tumor, giving the physical characteristics of one or several tumors within the thyroid gland, as contrasted with diffuse hypertrophy in exophthalmic goiter; adenoma has existed on an average of fifteen years before the development of toxic symptoms, as compared with a recent thyroid enlargement in exophthalmic goiter, the average age of the adenomatous group being considerably greater; and exophthalmos does not develop in adenoma regardless of the degree of toxicity. Again, it should be reiterated that exophthalmic goiter may exist without exophthalmos.

Medical Therapy: Rest of body and peace of mind have long been recognized as important in any method of treatment of toxic goiter. Limitation of protein intake would seem to assume additional importance in view of Mac-

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Leod's statement that the pulse is quickened after the administration of thyroxin only when protein food is also taken.

Within the past year or two there has been made available a medicinal therapy of definite value. Following Plummer's announcement of the effect of iodin administration (Lugol's solution) in exophthalmic goiter, there has been a remarkable unanimity in the reports of those who have written on the subject. The conclusions reached in the Thyroid Clinic of the Massachusetts General Hospital† will be quoted as representative:

1. Iodin by mouth will produce abrupt remission in most cases of exophthalmic goiter.
2. The remission is often as rapid and as extensive as that following subtotal thyroidectomy.
3. It is believed that iodin is the causal agent of this remission.
4. Iodin alone, as now used, has not been shown to be sufficient to suppress the disease permanently.
5. After a patient with exophthalmic goiter has been taking iodin, a rapid rise of metabolic rate and increase of toxic symptoms will occur within one or two weeks if the iodin is stopped.
6. In some cases of exophthalmic goiter, iodin has no observable effect.

The usual dose is fifteen to twenty drops daily. In toxic adenoma no benefit is observed, and at times symptoms appear to be aggravated by its use.

There is a lesson in humility in the use of iodin in goiter. Ten years, or even three years ago, as I understood the orthodox teaching, there was no place in the treatment of hyperthroidism for iodin, thyroid gland or any product used in the treatment of hypothyroidal states. If I saw a hyperthyroidal patient who had been given iodin, I thought she had suffered at the hands of some practitioner who had not learned that such practice was discarded long ago. Now, because of a theory conceived by Plummer of an incomplete thyroxin molecule in exophthalmic goiter, a definite advance is made in the management of the condition. There is doubtless a good deal yet to be learned about it. Starr and his co-workers in Boston note that the quantity of the dose in relation to various factors, such as the size of the gland, rate of metabolism, age of the patient, pathology of the goiter, duration of the disease, and the sympathomimetic symptoms, is yet to be solved. After all, the measure of success that has come out of Plummer's theory does not prove the theory. Certain patients whose symptoms have remitted under iodin suffer exacerbations while still taking the drug. Iodin prevents simple goiter and the hypothyroidism, myxedema and cretinism that may follow in the train of endemic goiter. Why is toxic goiter so much more frequent in women than in men? The whole subject still presents the most inviting fields for investigation, and for aught we now know iodin may yet find a use in toxic adenoma.

†Archives Internal Medicine: 34, No. 3, Sept. 15, 1924, p. 355.

INDUCTION OF LABOR AT OR NEAR TERM.*

By BURNLEY LANKFORD, M. D., F. A. C. S., Norfolk, Va.

It often happens in my own experience that I fail to use certain agents or procedures with which I am familiar but which, for one reason or another, I have neglected. Hearing or reading a paper on certain subjects will remind me: "Here is something that I have been overlooking, that will serve me well when needed," and so I go home carrying an old weapon, newly polished, for my armamentarium in the age old fight against illness and death. Such may be the case with you, and so I am bringing to your attention a simple procedure that, when wisely used, will prove of great benefit to our women patients.

I would like briefly to discuss the subject of the induction of labor under two heads, indications for, and methods of, induction.

While the title of this paper indicates a discussion of labor at or near term, will you allow me to digress just a little for a word or two about pernicious vomiting as an indication for the induction of labor? And by this we mean *pernicious* vomiting, because every case of vomiting that may seem pernicious is not, and very few women who have severe and long-continued vomiting really have the pernicious type. Just as we have ceased making the diagnosis of "neurasthenia" as an entity, so it seems to me we are gradually ceasing to attribute the vomiting of pregnancy to neurotic or reflex causes. It is doubtless true that a woman of what we call neurotic temperament (whatever

*Read before the Southside Virginia Medical Society, at Norfolk, Va., March 10, 1925.

that may mean) will have more serious and more difficultly controlled vomiting than a woman of a phlegmatic temperament; at the same time, is it not probable that the neurosis is not the cause but simply an aider and abettor? I believe we are all coming to think that we can more accurately classify all vomiting of pregnancy as slightly toxic, more toxic, deeply toxic, and pernicious. A discussion of the causes of such toxemias is not a part of this paper. What we have to do is to distinguish, if possible, between the severe and pernicious types, and abort the latter by induction in the least traumatic way. Any woman we suspect of having pernicious vomiting should be studied as carefully as we can, should certainly be isolated from her friends and relatives, if possible, and if creatinin appears in the blood as high as 3 or 4 milligrams per 100 c.c. we had better not wait longer for hoped for improvement, because if we wait until jaundice becomes marked and the development of coma, torpor and coffee ground vomit, it may be too late, no matter what we do. So far as I know, the marked increase in creatinin is the most valuable sign and one that must not be disregarded.

Now to get back on the main track. Probably the indication that will most often warrant the induction of labor near term is the development of severe toxemia. The question of the type of toxemia present does not interest us much just here as the fact that a woman *is* toxic, and that she is growing worse instead of better, although under treatment.

A great deal of good work is being done in the investigation of toxemias of pregnancy; we have numerous theories as to the cause, some of them plausible and comprehensive, but the fact still remains, at least so far as I am aware, that we do not know the cause or causes of the pre-eclamptic state or of actual eclampsia, and oftentimes we do not know how to remove the conditions in time to save the woman. What we do know is, that only pregnant women have eclampsia, and that despite the advances made in the reduction of the mortality by treatment of the toxemias expectantly (that is by rest, isolation, diet, elimination, morphia and the avoidance of rough and rapid delivery), there yet remains a considerable percentage of women who do not improve sufficiently under treatment, or if they improve temporarily, soon relapse. Such women must be relieved of the extra load they are carrying in the child, if we would save them from actual eclampsia and even death. Given a woman in the latter months of pregnancy who has become toxic, has been treated, has improved slightly or markedly, but who begins to "go bad" again, *then* is the time to induce labor, in the best interest of the mother, whether the child is viable or not, and whether circumstances be convenient or not. Only by such a course can we as a profession eliminate the scourge of eclampsia. We look forward to a better day, a day when symptoms may be accurately treated and the cause removed without the loss of the child, but as yet that day has not dawned. What we do know is that even now, in the vast majority of cases, we can prevent eclampsia, *if* we watch our patients closely enough, and treat them as outlined above.

Certain multiparae, who have had difficult forceps deliveries at term, whether from oversize babies, or from slightly contracted pelves, may have labor induced two or three weeks before term, with benefit to themselves and their offspring. The question immediately arises in such cases—when are they "two or three weeks from term?" That we cannot say with absolute precision, but we can estimate accurately enough to avoid the two dangers involved, which are inducing labor too early, therefore endangering the child, or waiting too late and having the same experience as in the preceding labors. Without going into details, the following observations will help to determine the time to safely induce labor in such cases: A multipara who gives a history of difficult, or forceps deliveries, should first of all have a careful examination of her pelvis so that we may have a fair idea of any degree of contraction; nothing can excuse us from this. A very careful history of the cessation of menses should be taken and recorded; the date of first fetal movements; monthly examinations of the abdomen, noting the height of the top of the fundus above the symphysis; estimations of the size of the fetal head by external pelvimetry; the general "feel" of the fetus; the condition of the cervix, which may be determined by rectal or vaginal examination. Another class of multiparae, almost like the above, is the woman who habitually runs over-time, and has a large baby as a result; the post-mature fetus about which we hear increasingly more. When such women come un-

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der our care, it seems to me good obstetrics to induce labor on her when her time, as calculated by an accurate menstrual history, has approximated term.

Dr. Norris, of Philadelphia, a very experienced and careful obstetrician, thinks that a primipara with a floating head at term should have labor induced, providing the floating head is not due to an impossible pelvis.

The question of lesser degrees of contracted pelvis deserves consideration in this connection. It seems to me that we may safely advise a woman with such a pelvis, who has had one or more difficult labors, that induction of labor, even as much as four weeks before the carefully estimated full term, offers her and her child a safer method than the full term instrumental delivery or Cesarean sections. We may be more conservative with the primipara, who has a mild degree of contraction, as we do not know before hand how much molding may take place, nor how well she may use her secondary powers of labor, nor can we tell exactly how much contraction any one woman has. In addition, there are a number of other factors that enter into such a decision with a primipara that might make us hesitate to induce labor so far ahead. With slightly contracted multipara, however, who has showed what would happen in one or more previous labors, there is no question in my mind but what the induction is the method of choice.

In certain cases of placenta previa, where the location of the placenta is such that a rupture of the membranes will allow the head to come down and plug the lower segment, it seems to me safer to induce labor in such cases as soon as they are discovered, rather than wait for further and increasingly dangerous hemorrhages. (Such cases should have bag induction).

There is another class of women, not a large class, yet one that we will all recognize, one that we all see occasionally, and in this class it seems to me we are fully justified in inducing labor two weeks, or thereabouts, before term: I refer to the woman who is extremely distressed during the last six or eight weeks of pregnancy, whether by persistent backache, very pendulous abdomen, general obesity with profuse sweating in the hot months, inability to walk more than a few steps without great discomfort, vague abdominal pains, general malaise, and occasionally other factors that are not dangerous in themselves, but that make and keep women miserable during these latter weeks.

Now as to the methods of induction! Unless the indication be urgent, it would seem wise to try the effect of non-mechanical means first in every case. By so doing, quite an appreciable number will go into labor, and labor so induced is certainly safer than mechanically induced. Watson, of Toronto, has reported 425 cases in which attempts to induce labor by a sequence of drugs, have been successful the first time in about 75 per cent. His plan, unless recently changed, is as follows: An ounce of castor oil is given at 12 M.; one hour later ten grains of hydrobromide of quinine; one hour later, a soap suds enema, copious and hot; one hour later, ten more grains of quinine; three hours later ten grains of quinine. If patient has not gone into labor nine hours from the last dose of quinine, he gives ½ c.c. of pituitary extract, and repeats this every half hour for six doses, if pains do not ensue. There are reports from other men that pituitary extract so used has been responsible for the premature separation of the placenta, and I do not mention this use of pituitary gland to endorse it.

Castor oil sequence having failed, the patient is never any the worse but almost invariably will express herself as feeling decidedly better the next day after taking the oil. We then have to decide upon which of the mechanical means we will use. Of these we have at our disposal the several types of bags, rectal tubes, bougies, packing with gauze, and simple rupture of the membranes. The Voorhees' bag is the generally accepted one, although there are a number of others used to induce labor, among which should be mentioned the Hirst bag. In cases of placenta previa where we wish to induce labor, the bag is just what we want until the head can be made to act as a plug, but in other conditions where we wish to induce labor, it seems to me we can dispense with the bag for a better means of induction. By better, I mean more easily and more aseptically introduced, a more nearly natural process of labor induced, and a less painful first stage. Either the old, soft, very flexible rectal tube, as advocated and used by Dr. Richard Norris, or the gauze packing, introduced through a slightly curved tube, will take precedence over the bags in the points just enumerated. My personal

preference and largest experience is with the gauze packing. This does not require a skilled or surgically clean assistant—any woman of ordinary intelligence who is not rattled and who will listen to your instructions, will be able to render all the assistance needed to introduce the packing.

Very few multiparae will need any anesthetic. I think it wise to give a short anaesthetic to every primipara, the choice of the anaesthetic depending upon the indication for the induction.

Dorsal or Sims' posture may be used; the vulval hair should be closely clipped rather than shaved; the external genitalia painted with two coats of 3½ per cent tincture of iodine (which is half the pharmacopoeial strength), neutralized as soon as dry by the copious application of alcohol; or the external genitalia may be painted with 2 per cent mercurochome solution. Two fingers are then introduced into the vagina (and not removed until all the packing is in), the posterior vaginal wall retracted, and the vaginal vault and portio vaginalis of the cervix painted with the iodine or mercurochome solution. The tip end of the packer is then gently pushed well up through the cervix, guided by the two fingers, which are usually sufficient for that purpose without the necessity of catching the cervix with forceps. The assistant now holds the jar or tube of packing close to the receiving end of the packer and the end of the gauze is easily fed into the packer by means of the plunger, without having to be touched by anything. Thus, the gauze is fed into the lower segment of the uterus directly from the sterile container and through a sterile tube—nor can this little operation be done in any cleaner manner. From two to four yards of a two inch gauze strip can usually be packed in; the direction of the inner end of the tube being changed slightly several times, during the procedure, so that as much as possible of the lower segment may be filled. The more accurately this is done the quicker and more surely will labor ensue. Gauze for this purpose should be in strips four to five yards long and two inches wide. Such strips can conveniently be carried in very large heavy test-tube-shaped glass containers, such as may be purchased from any supply house. The strip is packed lightly into the large test tube, the top stuffed with cotton, the whole wrapped in some heavy cotton container and thus sterilized. When used, the assistant removes the outside wrapping, which may be folded back over the hand, the operator removes the cotton stopper, and the assistant then holds the top of the test tube in close proximity to the packing tube, into which the gauze is fed immediately from the test tube.

Labor pains will begin at various lengths of time from the packing. I have seen this vary all the way from beginning before the patient got back to her bed, to one case, in which the pack had not induced labor thirty-six hours later. When pains do begin, however, they progress more nearly like normal labor, and I am sure that they cause less pain to the woman than labor induced with a bag. Gauze promotes the softening of the cervix and its retraction and obliteration in a way more nearly simulating normal labor than bags.

I do not know of any disadvantages of this method; it has never failed to induce labor but once for me, although I know it sometimes fails. However, bags slip out, pains cease and the bags have to be put back in some cases.

If reasonable degree of gentleness be used in the manipulations, the membranes will seldom be ruptured. If this does happen, the gauze will not be so effective in bringing on labor as will a bag, and it is wise, where possible, to have a bag ready for use, if needed. If pains do not ensue within twenty-four hours, I believe it will be safer to remove the packing, as such a foreign body, when left in too long (no matter how cleanly put in) invites sepsis.

This paper has not included every condition occurring during pregnancy in which induction may be advantageously used, but has covered the majority and has, I hope, served to refresh our memories regarding a useful procedure.

530 *Shirley Avenue.*

STUDY OF THE FUNCTIONAL CAPACITY OF THE KIDNEYS: SIGNIFICANCE OF SLIGHT DEVIATION FROM NORMAL.*

By
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and
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For the sake of orientation we will first briefly epitomize the prevailing concept of the physiology of urinary excretion. The kidneys have an abundant blood supply, the renal

*Read at the meeting of the Tri-State Medical Association of the Carolinas and Virginia, in Richmond, February 17, 1925.

arteries taking off directly from the abdominal aorta and being quite short. The arterial system leads eventually to the glomeruli of the kidneys where the arterioles break up into large capillary tufts. The vessels leading from the glomeruli are distinctly smaller than the afferent ones. This favors the idea that the blood in passing through the glomerulus loses a large proportion of its water. The arterioles leading from the glomeruli break up again into a second capillary network distributed around the convoluted tubules. This double capillary system is quite unique among the organs of the body and justifies in part the assumption that while water and perhaps other substances pass out through the glomeruli, the excretion of certain other constituents of the urine is a function of the convoluted tubules.

Briefly, the prevailing theory is that fluid passes out through the capillary walls in the glomeruli, through the very thin Bowman's capsule purely by physical processes, and that this transudative fluid contains its constituents in approximately the same concentration as that of the blood plasma. The glomerulus acts as a semi-permeable membrane allowing passage to water and most of the crystalloid substances but holding back the colloids. As this very dilute urine passes the cells of the convoluted tubules it is altered by the resorption of some of its constituents through the epithelium and back into the blood stream. Aschoff divides the urine excretory system into three sections, the glomerulus or filtration apparatus, the proximal convoluted tubule or resorption apparatus, and the loop of Henle, which serves as a pressure regulator.

The colloidal chemists explain the resorption of water in the primary tubules on physical grounds. Fischer believes that blood rich in carbon dioxid, such as arterial blood, has a to swell or absorb water, while blood poor in carbon dioxide, such as arterial blood, has a tendency to give up water or shrink. The arterial blood in the glomeruli gives up water readily while the venous blood in the second set of capillaries tends to absorb water.

The resorption of water explains the concentration of urine but it does not explain the alteration in proportion of the various elements. Sodium chlorid is concentrated to double the plasma strength, while urea is concentrated about forty times. In explaining this, Cushny divides the constituents of the blood plasma into threshhold bodies and nonthreshhold bodies. Dextrose, chlorid and sodium are threshhold bodies and are excreted only when their concentration in the blood exceeds a certain percentage. Threshhold bodies are necessary for vital processes and are retained unless in excess. On the other hand, substances which are of no use to the body, such as urea, are excreted when present even in small amounts and in this way have no appreciable threshhold of excretion.

According to the colloidal theory, substances with threshhold value pass through the glomeruli but are resorbed along with water through the tubular epithelium.

Aschoff maintains that in such a condition as mercury poisoning, mercury is excreted through the glomerulus and it is only during its resorption through the tubules that damage to the latter occurs. Gil-y-Gil has demonstrated that in experimental uranium poisoning the epithelial cells damaged during resorption acquire a tolerance to the poison. Lethal doses may be subsequently given with impunity, the uranium being excreted in the urine instead of being taken up in the cells. This gives us an insight into one phase of the production of chronic nephritis. The epithelial cells become less permeable, if we may use this term, to the substances which have passed out through the glomeruli and do not resorb them as they should. This is probably true of water as well as of the substances in solution. As a result, the concentrating ability of the kidneys becomes damaged.

We have been accustomed to describe parenchymatous nephritis and glomerular nephritis. In the one the damage appears to have been chiefly tubular, in the other glomerular. But both systems are more or less involved in either type and the clinical differentiation is often difficult or impossible. The word nephritis presupposes an infection or inflammation of the kidneys. Nephrosis is a designation applied to those types of renal pathology in which there is no evidence of infectious origin and in which the cause appears to have been toxic. This applies particularly to those cases with predominant involvement of the tubular epithelium. Parenchymatous nephritis is characterized by degeneration of the epithelium lining the uriniferous tubules with little or no involvement of the glomeruli. The kidney is slightly enlarged, the cortex broadened, and

an excess of fat deposit is found in the cells of the tubules. As a general rule there is no cellular infiltration of the connective tissue suggestive of localized infection, so that we may consider this condition a nephrosis. This is the type of picture observed in mercuric chlorid poisoning.

In acute and chronic glomerulonephritis the gross appearance resembles that of parenchymatous nephritis. The tubules are involved in greater or less degree, the glomeruli are swollen and show an increase in the number of nuclei dependent on multiplication of both endothelial and epithelial elements and in the advanced cases a crescentic mass of desquamated cells occupies the capsular space. These are usually inflammatory changes. Glomerular involvement does not undergo such complete recovery as does the parenchymatous type. The vascular tufts become adherent in places to the capsule and destruction of portions of the glomerulus results in partial hyalinization.

The interstitial connective tissue almost invariably undergoes proliferation and it was customary formerly to distinguish a parenchymatous and an interstitial type of nephritis, depending upon the degree of connective tissue formation. Weigert has shown, however, that chronic parenchymatous lesions are nearly always associated with interstitial growth. He interprets the connective tissue proliferation as an attempt to fill in the defect caused by the destruction of parenchyma, that is, a replacement fibrosis.

The secondary contracted kidney follows extensive parenchymatous destruction and connective tissue overgrowth and we may look upon this as the end stage of a chronic glomerulonephritis. The scar tissue in the kidney has a patchy distribution.

The primary contracted kidney or red granular kidney differs in many essentials from the types of kidneys just described. In the red granular kidney we observe bands or wedge-shaped areas of fibrous tissue enclosing atrophic tubules and obliterated glomeruli, alternating with active parenchyma. The glomeruli are small, hyalin and surrounded by a thickened capsule. They have suffered total destruction. In other portions of the kidney they are normal. The arterial walls in the red granular kidney are always affected. The elastic layer becomes thickened and the intima undergoes fatty degeneration. These degenerative lesions are undoubtedly a phase of arteriosclerosis, and the vascular lesion or arteriosclerosis is probably the chief factor in the production of the primary contracted kidney. The vascular changes are followed by nutritional disturbances which endanger particularly the glomeruli. After their destruction the tubules atrophy from disuse. Thus we see that the renal damage in all forms of nephritis involves both the glomeruli and the tubules, and the variations in the different types are only relative. Even in the arteriosclerotic or primary contracted kidney both systems are involved. It is apparently only in true nephrosis that the glomeruli remain relatively free from damage.

We can, therefore, readily understand the difficulty of attempting to localize renal injury in the living patient, whether in the tubules or in the glomeruli. It is far safer and more correct to speak of acute or chronic nephritis with or without hypertension, thus describing the renal pathology as a whole. This attitude has been urged particularly by Christian in this country and by Jores and others in Europe.

The fallaciousness of simple qualitative urinalyses is known to all. The value of functional tests is conceded. The interpretation of their significance is, on the other hand, not always above question. We no longer think of the salicylic acid test as a measure of the permeability of the glomeruli, the methylene blue test as a measure of the osmotic function of the epithelial cells, and the phlorizin test as a means of determining the secretory ability of the renal epithelium. Even with those tests which are in general use today it is hazardous to venture concrete hypotheses with regard to their *modus operandi* in the kidney.

In terms of the preceding discussion we may, however, at a certain risk of accuracy, visualize the reaction of the kidneys to the commonly used functional tests somewhat as follows:

Disease of the kidneys affects the body either by allowing substances to pass out which should be retained, or by retaining substances which ought to pass out. Of the substances which should be retained but do escape, albumin is of chief importance. Of those which should be excreted but are retained those commonly measured are uric acid, urea and creatinin. Either the glomerular membrane becomes less

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permeable to them or they are resorbed in the tubules. The former seems the more likely. These are non-threshhold substances and normally are not resorbed. Moreover, observations indicate a diminution rather than an increase in the absorptive capacity of the tubules.

Phenolsulphonephthalein is an organic dyestuff towards which the body reacts as it does toward urea. Undoubtedly it is excreted through the glomerular epithelium and normally is not resorbed to any great extent in the tubules. Like urea, in chronic nephritis it probably does not pass as readily through the glomeruli. The reaction of the kidneys to phenolsulphonephthalein is proportionately so similar to their reaction to urea and other nitrogenous substances that the phthalein test has come to be used as a measure of the capacity for excretion of nitrogenous substances.

We cannot at present explain with entire satisfaction the inability of the damaged kidneys to concentrate those crystalloids which do pass the glomerulus. The fluid passing through the glomeruli presumably contains those crystalloids which are not materially obstructed in about the same concentration as in the blood. Failure to concentrate is then presumably due to some change in the tubular epithelium. We have seen that the chronically poisoned epithelium becomes less permeable to certain substances. It is possible that the failure to concentrate substances, such as sodium chlorid, is due to lessened resorptive capacity for water.

We are not so much interested in sodium chlorid as an excretory product as we are in the kidneys' ability to concentrate.

It is usually stated that the urea excretion is an index of glomerular function, while salt and water excretion is an index of tubular function. The two latter are threshhold bodies. From the foregoing we can see how in a general way this may be true.

Normally the kidneys can concentrate uric acid about twenty-three times, urea sixty times, and creatinin one hundred times. With functional impairment, therefore, uric acid, which is concentrated with least ease, increases first in the blood, while creatinin does not increase materially until toward the end stages of a chronic nephritis.

We will not detail the normal standards for the various functional tests.

Certain generalizations have been made from functional studies, which, while in the main correct, have important exceptions, and it is our desire briefly to direct attention to certain of these. It has been stated, for example, that the examination of a single specimen gives no information regarding the functional capacity of the kidney. It is true that little information is gained from a single urinalysis and that when its specific gravity is low, we have no indication of the functional capacity of the organ. But when the specific gravity is 1020 or above we may be confident that the concentrating ability of the kidney is reasonably good, and that nitrogenous substances are being excreted by the kidney in essentially a normal manner. Thus, a single specimen with high specific gravity is of definite value. Of course it is necessary to rule out the presence of sugar.

It has been stated that when the phthalein excretion is high we may be confident that there is no nitrogen retention in the blood. This is not always true. The particular exception is to be found in acute nephritis. Thus, a patient excreting 50 per cent phenolsulphonephthalein in two hours (nearly a normal figure) had a salivary urea index of 80 with calculated blood urea 81 and non-protein nitrogen concentration in the blood of 78 milligrams per 100 c.c. This increased until the patient had typical uremic convulsions while the phthalein elimination never fell below 45 per cent in two hours. The kidney was able to eliminate phenolsulphonephthalein, etc., in normal concentration, but the trouble lay in the water excretion which was so greatly impaired that not enough water could pass through to prevent the damming back of urea in the blood. In support of this, the water excretion in two hours following a heavy fluid intake was 300 c.c. instead of the normal 1,000 c.c., and the specific gravity was 1,018 as contrasted with the normal of 1,005 for this test. Acute nephritis is then an exception to the generalization that with a high phthalein excretion there is no nitrogenous retention in the blood.

A high specific gravity does not necessarily indicate normal ability to concentrate urine. We may find lack of flexibility in the two-hourly renal test, the variation in specific gravity throughout the day being less than 10 points, showing distinct fixation of specific gravity at a high level. This is particularly apt to occur in parenchymatous lesions and we

have observed it repeatedly in cases of long-standing focal sepsis.

A tendency toward fixation of specific gravity at a high level may appear in normal individuals who from habit have a low water intake. This observation is of help in directing their daily routine in that, with a greater fluid intake, they develop a normal type of reaction. We have found that such an individual can be fairly readily differentiated from the low grade nephritic by increasing the fluid intake throughout the day. Large amounts of water are given during the day but none after six or seven P. M. Where it is simply a matter of fluid intake, the night volume and specific gravity are within normal limits. Where there is true damage, an abundant fluid intake during the day may overcome the fixation in the day specimens with resulting normal fluctuation, but at night the volume is increased and the specific gravity often falls below normal.

Thus, an individual on whom numerous two-hourly renal tests have been performed, usually showed a specific gravity ranging between 1,020 and 1,026, about half the normal variation. His night output was on one occasion 360 c.c. with specific gravity 1,020. These night fiures are normal, the day figures normal except for diminished variation. After an abundant fluid intake the specific gravity of the day collections varied from 1,010 to 1,025, which is again normal, but the night output was 1,125 c.c, practically twice normal.

Our experience has been that in early kidney damage, particularly that resulting from low grade focal infection, the picture presents either a negative urinalysis or an occasional cast and leucocyte with or without albumin, and a tendency toward fixation of specific gravity at a high level without ability to concentrate the night urine following heavy fluid intake.

However, no one test is sufficient in all cases and no study of renal function even in the mildest nephrotic is sufficiently complete unless all of those tests of proven value have been made and correlated. No single functional test is sufficient for the recognition of early pathology. This is due chiefly to two factors: First, excretion for some substances may be normal while impaired for others, and, second, even in the normal there is considerable fluctuation in the response, and multiple checks must therefore be applied.

The question arises, which tests should be used by preference. In England the estimation of the blood urea and of the urinary urea concentration are held important. In France reliance is placed chiefly upon the estimation of blood urea, the maximum concentration of urea in the urine, and on Ambard's co-efficient of urea excretion. In the United States blood nitrogen estimations and the phenolsulphonephthalein test are most commonly used.

To these latter we would add as essential for a proper evaluation of kidney function, the two-hourly concentration test and the water excretion test. The urea concentration factor is equally valuable but has no great superiority over the phthalein.

Medical Arts Building.

HODGKIN'S DISEASE—AN ATYPICAL CASE.*

By O. O. ASHWORTH, M. D., Richmond, Va.
From the Medical Department of St. Elizabeth's Hospital.

Mr. H. W. M. B., single, American, age twenty-seven, occupation, farmer, admitted to St. Elizabeth's Hospital December 6, 1923, complaining of "cramping pain in the legs and hips, and headache."

His family history was essentially negative and his past history was negative except that he had just recovered from an operation for appendicitis, at which time his tonsils were also removed.

The history of the present illness given by the patient was essentially as follows: Nine months ago, he had a great deal of cramping pain in his hips and legs which was intermittent and had no tendency to be exaggerated at any special time during the day. About one month later he had "flu" and was confined to bed for a period of six weeks. About two months later he had another attack of "flu" and was compelled to be in bed for about two weeks. He continued to feel badly generally and soon afterward his attention was called to some enlarged glands in his neck. For this he consulted an osteopath, who told him that he had "liver trouble" and goitre and gave him some electrical treatment.

His condition did not improve and he consulted a physician who advised the removal of his tonsils and appendix, which was done six weeks before admission to St. Elizabeth's Hospital. After the operation the surgeon in-

*Read before the Richmond Academy of Medicine, December, 1924.

formed him that his spleen was found to be enlarged and advised him to come to Richmond for X-ray treatment for "blood trouble."

There was no history of epistaxis or unusual hemorrhage or easy bruising.

The cramping in his legs had seemed better since the operation, but he was becoming much weaker and was rapidly losing weight. The glands in his neck seemed to be somewhat larger than when first noticed, but were never red or tender.

Briefly: His P. E. indicated a well developed man of medium height with signs of marked loss of weight. His temperature was 100.8 when admitted to the hospital. The skin was sallow, mucous membranes pale, the conjunctiva yellow, and the tongue pale and slightly coated. There were glands in the lower left cervical chain which were considerably enlarged, each being about the size of a small cherry. The glands were freely movable, slightly indurated and not tender. There were no other palpable glands.

Thorax: The right supraclavicular fossa was deeper than the left. Expansion was apparently equal on the two sides. There was definite increase in retro-sternal dulness which extended to 5 cm. from the M. L. in the left second I. C. S. There was slight dulness in the left axilla from the 7th I. C. S. to the base and in the right axilla from the 8th I. C. S. to the base There was some increase in interscapular dulness on both sides, more marked on the left. There were increased W. V. sounds with prolongation of expiration at the left apex anteriorly to the third rib and posteriorly to the spine of the scapula. There were no rales.

Heart: Apex impulse in 4th I. C. S., 10½ cm. from the M. L. There was a well marked, visible precordial pulsation, which was maximal over the 2nd and 3rd I. C. S., to the left of the sternum. An inconstant systolic murmur was heard at the apex which was not transmitted to the axilla and a definite systolic blow at the pulmonic area which was not transmitted. All sounds were of fair quality, the pulse was regular in F. and R. Medium volume 33 to ¼ minute. The blood pressure was 104/48.

Abdomen: Abdomen was moderately distended and tense. There was a right rectus incision of recent date, which had healed satisfactorily. There was no tenderness at any point. Tympany extended to flanks. There was no shifting dulness. There was liver flatness from the 4th rib down to the costal border and the area of splenic dulness was considerably increased. The edge of the spleen could be felt on deep inspiration and appeared fairly sharp and not tender.

The knee jerks were obtained only after reinforcement.

Examination was otherwise negative.

Routine Blood Examination: The Hbg. was 55 per cent (Sahli), the R. B. C. 3,960,000 and the W. B. C. was 10,800. Polys 70, Eosinophiles 3 per cent, Large Mononuclears 18 per cent, Lymphocytes 5 per cent. Smear showed some achromia of the R. B. C. with apparent increase of platelets.

Routine urine examination was negative except for a trace of albumen.

Intravenous phenolsulphonephthalein test showed 70 per cent excretion of phthalein the first hour and a trace the second hour.

Gastric analysis showed a trace of bile in all specimens with about 1/10 the normal amount of free and comb. acid in a fractional test meal.

Blood culture was negative. Repeated stool examinations were negative for parasites. The Wassermann was negative.

An X-ray examination of the chest by Dr. F. M. Hodges was negative.

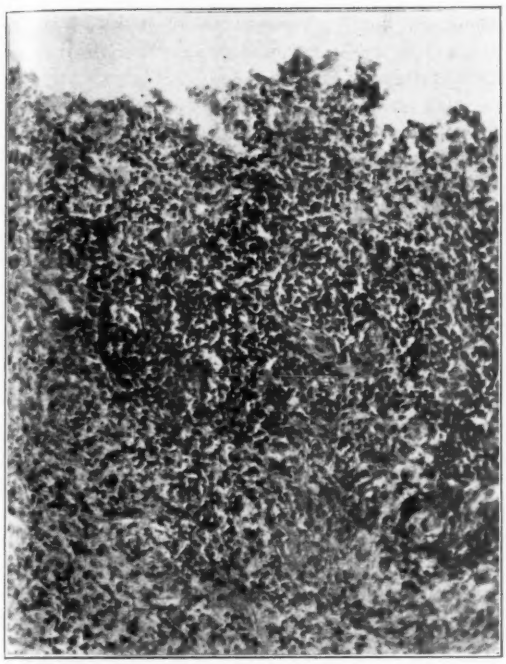
From the enlargement of the cervical lymph nodes, apparent enlargement of the spleen, the blood picture and general symptoms of the patient, a tentative diagnosis of Hodgkin's disease was made.

On December 14th, under local anesthesia, a gland was removed from the neck by Dr. J. Shelton Horsley for histological examination. Sections of the gland were quite suggestive of Hodgkin's disease. This diagnosis was subsequently made from sections sent to Dr. Broders of the Mayo Clinic.

The patient was given X-ray treatment by Dr. Fred Hodges over the splenic area, upper thorax, mediastinum and neck. After three treatments over a period of five days the patient's temperature, which had ranged from 100 to 102½, became normal. His appetite and general condition steadily improved and a letter from him three months from the time of treatment indicates that he is up and around and in apparently good condition.

The crucial test in the differential diagnosis

in this case was in the histological examination of the lymph gland excised for diagnostic purpose. From the history, clinical symptoms and P. E. the diagnosis had to be made from the following diseases:



Section from the cervical gland showing lymphosarcoma of the Hodgkin's type, x200.

Hodgkin's disease, the leukemias, an acute bacteremia, syphilis, tuberculosis, lymphosarcoma, malignancy, and endocaritis.

The blood picture was characteristic of Hodgkin's disease and, of course, eliminated the leukemias. There was no evidence of a focus for an acute bacteremia and repeated blood cultures were negative. The stool examination was negative for typhoid. The enlargement of the spleen and localization of lymphatic enlargement, lymphopoenia, negative history and negative Wassermann reaction largely ruled out syphilis as a cause of the glandular hyperplasia. While tuberculosis is a common cause of progressive lymph gland enlargement, it is most frequent in young people, pyrexia is not so often marked, the glands are usually matted together, areas of necrosis and softening occur in the gland and the inflammation extends into the periglandular tissues, often with involvement of the skin and fistula formation. In tuberculosis there is usually a relative lymphocytosis, and often signs of tuberculosis elsewhere in the body. A differential diagnosis from lymphosarcoma would have been difficult had there not been a histological examination of the excised gland.

Where lymphosarcoma ends and Hodgkin's disease begins is not settled. Those cases which have a localized focus, a strong tendency to metastasize to periglandular tissues, with a rapidly fatal ending, and which have leucocytosis as their most prominent feature, are styled lymphosarcoma. Similar cases with the addition of enlargement of the spleen, but a fairly rapid fatal ending, are termed acute Hodgkin's disease.

McCarthy is of the opinion that the lymphosarcoma and Hodgkin's disease may be but different manifestations of the same condition.

In regard to a true malignancy, there were no marked G. I. symptoms or other evidence of a malignancy as a primary focus.

The history of the case, blood picture, absence of cardiac symptoms and enlargement, and negative blood cultures, might have warranted an exclusion of endocarditis as a cause of the pyrexia, but here, too, the crucial test in the differential diagnosis was in the histological examination of the lymph gland excised for diagnostic purpose.

The preceding case, while not an atypical case of Hodgkin's disease, nevertheless presented certain features which could easily have led to a mistake in diagnosis. The features in the differential diagnosis have been previously mentioned.

Hodgkin's disease, while infrequent, is not rare and comes next in frequency to tuberculosis as a cause of progressive lymph gland enlargement in young people. Trousseau has divided the disease into three clinical periods: the latent period, the period of progress and generalization, and the cachectic period. In the majority of patients the latent period is passed over without any symptoms that attract their attention and slight glandular swelling is the first symptom noted. The symptoms vary as the disease progresses, according to the resistance of the patient and the location and extent of glandular involvement. In the greatest number of cases, the patient first consults the physician because of the discovery in some location of enlarged

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glands which have developed painlessly; usually such glands are noted in the neck. Collection of cases in literature give a percentage of fifty per cent or over for primary cervical enlargement. Longcope found primary neck involvement in 66 per cent of eighty-six cases. Of the other superficial groups the axillary glands are first involved more commonly than the inguinal group; following these in frequency are the mediastinal and abdominal group. Splenic tumor develops in 60 per cent to 70 per cent of cases. The patient gradually passes into the cachetic stage with marked anemia, pressure symptoms, and a general state of malnutrition. During this period, fever; which may occur in moderate degree during any stage of the disease, becomes a more marked feature. Febrile periods, often of great intensity and of several days' duration, followed by an apyrexial interval of several days' duration, are again succeeded by a wave of pyrexia. During the febrile periods the patient feels desperately ill, with headache, complete anorexia, vomiting and exaggeration of all symptoms. The afebrile period on the other hand is a period of calm and well-being.

In lymphatic hyperplasias, when diagnosis is doubtful, exploratory puncture or excision of a gland will usually make the diagnosis certain.

While the prognosis in Hodgkin's disease is grave, X-ray and radium treatment will usually relieve symptoms and prolong life. In a few early cases where the diagnosis was apparent correct cures have been reported. The earlier the diagnosis in any glandular hyperplasia the more hope there is for cure by any correct method of treatment.

617 *West Grace Street.*

APPENDICITIS FROM THE VIEWPOINT OF THE GENERAL PRACTITIONER.*

By J. G. DAVIS, Jr., M. D., Christiansburg, Va.

It is not with the idea of advancing anything new in regards to appendicitis, but with the hope of sounding a warning lest we forget the things we already know only too well, that I take the privilege of bringing such a frequently discussed subject before you.

I am not going to burden you with any of the details of the symptoms, diagnosis, etc., which are familiar to you all, but limit this paper to a few suggestions to the general practitioner who is called first of all to see a patient with "acute indigestion" or "a pain in the stomach."

When we remember that the appendix is by far the most frequent cause of so-called "indigestion" or abdominal pain, it is of paramount importance that disease of this organ be eliminated before any medical treatment, such as purgatives, dietary, etc., be instigated. Any abdominal pain, except due to traumatism, known poisoning, etc., should call for absolute rest and elimination of everything by mouth, until a definite diagnosis is established. The diagnosis of the usual case of appendicitis is, as a rule, exceptionally easy and for this reason we must look for some other cause of such an appalling unnecessary mortality as we now have from this disease. It is not in the fault of the diagnosis but the treatment. A doctor is called to see a patient with an attack of abdominal pain; nearly always he has had one or more previous attacks very much of the same nature and rapidly improved following a purgative, often given by some less cautious physician. Why then should this doctor insist on an operation, especially before some medical treatment has been tried? To a patient with a severe attack and excruciating pain it is not very difficult to explain the possibilities of a perforation during such treatment; but to one with a mild attack it is often very hard. The question now arises, when should surgery be insisted on and when should medical treatment be resorted to? We know that with the best and most careful medical regime about 10 per cent of all cases will terminate in a perforation. Where then, can be the justification of such a treatment unless the dangers of surgery out-weigh the 10 per cent; and we know that the results of a so-called "clean" operation are almost 100 per cent perfect. Whether or not the present attack will subside or perforate is, of course, a matter of judgment and has to be decided by the physician at the time.

If an operation be decided upon even though the case seems mild, there is no advantage in not considering it an emergency case. All food and water should be stopped and the patient given a hypodermic of morphia—but never the morphia until after the operation is agreed upon or there is some contraindication to surgery. I once heard a surgeon say that any doc-

*Read before the Southwestern Virginia Medical Society, at Pulaski, Va., March 26-27, 1925.

tor who would give a purgative to a patient with appendicitis was nothing short of a criminal. Perhaps that is putting it a bit strong, but certainly the one who masks nature's warnings with morphine without first being assured that the patient is willing for an operation is no less guilty. Pain is the greatest protection we have to human health and life; indeed, it is often the only thing that will bring a patient to the operating table. I once saw a case of peritonitis following a perforation absolutely refuse an operation until the effects of a hastily given hypodermic had worn off, after which, when a second one was denied, she was positive an operation was the only thing to be considered. Please do not misunderstand me; I am not condemning morphine in the treatment of appendicitis; indeed, it is the most valuable drug we have in this condition. The objection to it here may be applied equally as well to many other conditions; it is dangerous only in that it may mask symptoms which, if not interfered with, would bring the patient to a life-saving operation. Perhaps doctors in the cities have little trouble in getting patients to follow out their advice, but in the rural districts where a morbid fear of the word hospital still exists, the question of a method of convincing a patient an operation is necessary often becomes of paramount importance; and until these people are educated to what is and what is not a dangerous or necessary operation, it is our duty at least to refrain from interfering with nature's time-tried method.

In conclusion, let us say that although the diagnosis is occasionally at fault, there is little question but that the treatment is the chief source of error causing the high mortality which now exists. Appendicitis is a true surgical condition, and until the medical profession realizes this and discontinues dangerous and often futile attempts to treat it by any other method, the death rate will remain the same as it has for the past many years.

New Altamont Hospital.

Some ships go East and some go West,
Whilst the self-same wind doth blow,
For it's rudder and sail, and not the gale,
Decide where the ship shall go.
Nor wind, nor gale, control our fate,
As we journey along through life;
It's the set of the soul decides the goal,
And not the calm nor the strife.

—*Wilcox.*

EARLY REMOVAL OF DRAINAGE IN ACUTE, PERFORATIVE, GANGRENOUS APPENDICITIS WITH PERITONITIS, WITH ANALYSIS OF 100 CASES.*

By S. S. GALE, A. B., M. D., F. A. C. S., Roanoke, Va.

While the method that we have adopted in handling these cases is original as far as we are concerned, upon reviewing the literature we found that Moynihan and Yates had done considerable experimental work on dogs to see just how long a drain in the peritoneal cavity actually drained, and from their experimental work they proved that a drain was practically completely walled off from the rest of the peritoneal cavity within twelve hours.

We have never done any experimental work along this line but some six or seven years ago my associate, Dr. Whitman, and I began to remove drainage tubes in perforative, gangrenous appendicitis, with peritonitis, within a few days, and as the results were good and we gained more experience we began to remove the tubes within from twenty-four to thirty-six hours, rarely leaving a drain in longer than seventy-two hours. We found that a large number of these patients would get well in from nine days to two weeks, and almost without an exception that they would be ready to leave the hospital within two weeks, even though the wound was not entirely healed.

During the latter part of this series of cases we stopped using a rubber tube almost entirely except in a few selected cases, simply using a rubber dam drain with a gauze wick.

It is our belief, based on the teaching of John B. Murphy, that peritoneal infection is taken care of principally by the lymphatics and that as soon as the peritoneal cavity is opened, if the focus of infection, viz., the appendix, is removed, the pus is no longer under pressure, the absorption of pus ceases and is then handled by the lymphatics with the other protective body forces.

Also, during the latter part of this series of cases we have endeavored to cleanse the peritoneal cavity by means of a suction apparatus and then to wash out the peritoneal cavity with warm sterile salt solution, this also being removed with the suction apparatus, following a method which was suggested by Willis, of Richmond. We are inclined to believe that

*Read before meeting of the Tri-State Medical Association of the Carolinas and Virginia, at Greenville, S. C., February 20 and 21, 1924.

this has also helped to shorten the time of recovery, but in my opinion the outstanding feature of this treatment is the removal of the appendix, the removal of pus by a suction apparatus, the insertion of a rubber dam drain, one or two as the case may require, usually a long one going down into the Douglas cul-de-sac, and occasionally a shorter one down to the stump of the appendix, and the complete removal of these drains within seventy-two hours, at the outside.

Below is a brief analysis of these cases:

Total Number of Cases	100
Males	68
Females	32
Oldest Patient	64 yrs.
Youngest Patient	8 yrs.
Average Age	28½ yrs.
Highest Leucocyte Count	32,600
Lowest Leucocyte Count	8,000
Average Leucocyte Count	17,625
McBurney Incision	80
Right Rectus Incision	20
Time Sick Before Operation	From 6 hrs. to 3 wks.
Average Time Sick Before Operation	3 days

We sent out 100 questionnaires and received replies from eighty.

Eight of these cases had hernias, 10 per cent.

Out of twenty right rectus incisions, two developed hernia.

Out of eighty McBurney incisions, six developed hernia.

In the eight hernia cases tube was removed, two on fourth day, four on sixth day, one on twelfth day, one on fourteenth day.

Average number of days tube stayed in, seven days.

Note that in one case tube stayed in twelve days, and in one case fourteen days. Undoubtedly tube stayed in these cases too long. Note that no hernia developed in any case in which tube was removed prior to the fourth day.

Note difference in stay in hospital of patients in whom drainage tube was removed early:

Drain removed third day, nineteen cases. Average number of days in hospitals fourteen and one-half.

Drain removed fourth day, seventeen cases. Average number of days in hospital, seventeen and one-half.

Note these patients stayed in hospital three days longer than patients with drain removed on third day.

Drain removed fifth day, ten cases. Average number days in hospital twenty-one.

Note these patients stayed in hospital three and one-half days longer than patients with drain removed on fourth day.

Apparently for every additional day drainage tube remains in three days are added to time patient stays in hospital.

Number of patients in hospital under twenty-one days	60
Average removal of tubes	5 days
Average stay in hospital	16 days
Complications in 100 cases	13
Pneumonia	6
Acute septic nephritis	1
Unhealed sinus	1
Phlebitis	1
Intestinal obstruction	2
Peritonitis that caused death	2
Number cases appendix not removed	3
Number of deaths	6
Mortality	6%

Cause of Death:

1. Patient died from acute nephritis on sixteenth day. Tube removed on fourth day.

2. Patient died from general peritonitis less than twenty-four hours after admission.

3. Patient died from general peritonitis twenty-four hours after operation.

4. Patient, six months pregnant, had been sick five days. Delivered of dead foetus. Had double pnumonia. Died two days after operation from double pneumonia, pregnancy complicating.

5. Patient died from obstrûction eleven days after operation. Tube removed on fourth day.

6. Patient died from pneumonia on twentieth day after operation. Tube removed on second day.

Lewis-Gale Hospital.

THE RELATION OF THROAT INFECTIONS TO ACUTE NEPHRITIS.*

By ESTILL L. CAUDILL, M. D., Narrows, Va.

There has occurred in Giles County within the last few weeks an unusually large number of cases of acute nephritis following throat infections.

*Read before the Southwestern Virginia Medical Society, at Pulaski, Va., March 26-27, 1925.

The structures of the mouth and upper air passages are peculiarly exposed to infection. The great variety of pathogenic micro-organisms that are present in the saliva and pharyngeal mucus constitute a universal danger of infection. The most trifling lesion of the mucous membrane serves as the point of entrance to deeper structures. Enlarged tonsils and hypertrophy of the adenoid and other lymphoid tissue of the naso-pharynx interfere with respiration and drainage and favor infection of these structures.

Members of the streptococcus-pneumococcus group have been shown to be present in the throats of a large number of individuals apparently in good health. They vary greatly in virulence. The virulence increases under conditions favorable to luxuriant growth. Any condition lowering the natural resistance of the body favors systemic infection.

There has been a feeling among certain workers that bacteria have an affinity for certain organs. Bumpuss and Misser have recovered streptococci viridans from the teeth and tonsils of certain patients with nephritis and found that these organisms upon injection into rabbits produced lesions in the rabbit's kidneys. They considered that the infections in the kidneys in man may come from infections elsewhere in the body with organisms which have a special affinity for the urinary tract.

That there is a temporary bacteriaemia following throat infections, and that the infection reaches the kidney through the blood stream is no longer doubted. The presence of typhoid bacilli in the urine of patients suffering with typhoid, and tubercle bacilli in patients with pulmonary tuberculosis, but with no renal lesions, is evident proof that these infections are of hematogenous origin.

Bumpuss and Misser have inoculated eighty-two animals with streptococci taken from the teeth and tonsils of patients suffering with pyelonephritis, and in sixty-three of these animals lesions of the kidney were found. They believe that pyelonephritis is often due to local infection containing streptococci, which have a selective affinity for the urinary tract, and that the colon bacillus, which is commonly present, is only a secondary infection.

Hayden, in a more recent article, reports his findings on the injection of twenty-eight rabbits with cultures taken from patients suffering with nephritis, 89 per cent of these animals showing gross kidney lesions.

James, of Boston, in studying fifty-eight cases of acute nephritis in children, gave tonsillitis as the etiology in twenty-two cases. In eight cases of acute nephritis seen in my practice in the last few weeks, tonsillitis preceded the onset of urinary symptoms from three days to two weeks. In most of these cases the throat infection was apparently mild, and a physician was not called until the symptoms of nephritis developed.

I wish to report the following cases:

Case 1.—Mrs. D., housewife, age thirty-one. Has four living children. Has had no severe illness but has had recurrent attacks of tonsillitis. On January 15th, she was taken with sore throat, chills and aching in head and limbs. States that she had white spots on tonsils. Did not have a physician. Sore throat lasted for several days. On January 20th, five days after onset of tonsillitis, she began suffering with severe pain in head and back of neck, had dizziness and blurred vision. At this time there was swelling of face and eyelids. Had insomnia, nausea and vomiting. The edema soon became general, involving the entire body. The pain in the head and back of neck became so severe that morphine was required for relief. The systolic blood pressure was 160. Urine was scanty, at first not over four ounces in twenty-four hours, and contained a large amount of albumen, pus and casts. For three days there were threatening uremic convulsions. The convalescence has been slow, and at the present time the urine contains a light cloud of albumen.

Case 2.—Fred R., male, age fourteen. Has had pneumonia four times. Had measles and whooping cough two years ago. Has had recurrent attacks of tonsillitis. Last attack February 2nd, which lasted for several days. February 5th, swelling was noticed in the face and eyelids. February 8th, was admitted to hospital with uremic convulsions. Had three violent convulsions within one hour before admittance. There was general edema, nausea and vomiting. The tonsils were enlarged and acutely inflamed. The urine was very scanty and contained large amount of albumen and casts. The acute symptoms soon subsided and the patient has made a good recovery.

Case 3.—Mrs. J., housewife, age fifty. Had never had any severe illness. On May 1st, de-

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veloped a severe sore throat with chills and aching in limbs and back. On May 2nd, the temperature was 106 and pulse 130. A greyish membrane covered the tonsils and upper pharynx. Urination was frequent and painful. The urine contained red blood, later pus and casts. There was swelling of the face and lower extremities. The joints became swollen and painful. Several days afterwards deep seated abscesses developed along the course of the long bones in the lower legs, later extending to both thighs. A large amount of greenish pus was drained from both legs. Multiple abscesses occurred over the body, and the patient died June 22nd with a general systemic infection.

No acute infection, however mild or limited, is without the possibility of a complicating nephritis.

TRAUMATIC APPENDICITIS.*

By CHARLES H. LUPTON, M. D., Norfolk, Va.

In searching the literature it is apparent that traumatic appendicitis is very rarely reported and from the articles written there seems to be much doubt in the minds of a large majority if traumatic appendicitis really ever occurs. Most men agree that trauma to the abdominal wall may cause an exacerbation of an already diseased appendix, but not many can conceive how it is possible for appendicitis to develop from an injury provided the appendix was normal at the time of the accident. This latter class will be the one discussed in this paper.

Whether an injury or blow to the abdominal wall will cause an injury to the abdominal viscera will depend upon many factors, the force of the blow, the thickness of the abdominal wall, whether the abdominal muscles are under tension or relaxed, and the kind of object producing the injury. It is possible to produce injury to the abdominal wall without injury to the viscera, especially if the muscles are strongly contracted; on the other hand, it is possible to produce injury to the viscera (bruises, rupture, etc.) without evident injury to the abdominal wall if the muscles were completely relaxed. The extent of the injury will vary according to the thickness of the abdominal wall and the force and character of the trauma.

All agree that a severe blow to the abdomen will cause rupture of the intestines, etc., but not many can conceive how it is possible to produce injury to the appendix as it is situated so far posteriorly and is so freely movable. In considering the position of the appendix, we must remember that the body varies considerably even though the base occupies practically always the same position. Appendicitis is due to bacterial infection, but we must remember that the appendix normally harbors bacteria, and does not become infected unless its resistance is lowered in some way and permits normally inactive bacteria to gain entrance to the wall of the appendix. Anything that interferes with the emptying power of the appendix would lower its resistance, and any bruise, however slight, might produce this very effect, thereby permitting infection to take place. An injury, to produce traumatic appendicitis, does not necessarily have to produce rupture or even marked laceration of the appendix. It is only necessary to bruise or over-distend the appendix to interfere with its function, which in turn will give opportunity to bacteria normally inactive to become active and produce appendicitis. The viscera nearest the abdominal wall are not the organs necessarily injured in an accident, as is often observed.

If traumatic appendicitis was a common condition, it would seldom be observed by the surgeon, who only operates after the inflammation has progressed enough to present symptoms necessitating operative procedures, and by that time any bruise or small laceration would be entirely obscured by the swollen and inflamed condition of the appendix.

If an individual, who is in good health and has never complained of attacks of abdominal pain or any symptoms that would remind us of a diseased appendix, receives an injury to the abdomen, and symptoms of appendicitis develop immediately or slowly thereafter, and the operator observes a bruised condition of the abdominal wall and a bruised condition of the large intestine near the attachment of the appendix, with an acutely inflamed appendix with no adhesions and without the appearance of previous trouble, then we could not be justified in forming any other opinion but that the injury was the exciting cause of the appendicitis. Most text-books, in discussing traumatic appendicitis, conclude the subject by saying it cannot happen. They do not offer satisfactory explanations why it cannot happen. If you will concede that the appendix is not immune

*Read before the Norfolk County Medical Society, May 12, 1924.

to injury, and I hardly see how anyone can say that any part of the body is immune, then you will have to admit that appendicitis may develop following a bruise, laceration or overdistention. It is an every-day observation that bruises or injuries predispose to infection. I believe traumatic appendicitis following immediately after an injury to be an extremely rare condition, because, if there was enough injury to the appendix to cause infection to take place within a few hours, there would in all probability be enough injury to the other parts of viscera to entirely mask the appendicitis. On the other hand, a bruise or overdistention which interferes with the function of the appendix and lowers its resistance and permits infection to take place slowly is not as uncommon as many believe.

Some text-books, in discussing this subject, state if trauma will cause appendicitis that it should be able to cause typhoid fever. I cannot see any comparison between the two conditions. We know that the appendix harbors bacteria at all times, but does not become infected unless its function is interfered with or its resistance lowered in some way. On the other hand, the only people who do not develop typhoid fever when the bacillus is taken into the system are those who are naturally immune, as typhoid carriers or those who have been made artificially immune by typhoid vaccine.

Report of a Case

W. R. R., aged twenty-six, white, male, who had previously been in excellent health and had never suffered from any attacks of abdominal pain, indigestion or any symptoms that were referred to the intestinal tract, was struck by an automobile, which knocked him against the rear of a wagon on July 11, 1923. He sustained injuries to the anterior of both thighs and to the abdomen, and was also shocked and dazed for a few minutes. After a few minutes he did not suffer from any symptoms except pain from the bruises of the thighs, which was rather marked, and a slight pain in the abdomen. He did not deem his condition serious enough to consult a physician until the next day when he came to see me. On examination, I found a bruised condition of the anterior of both thighs, and the abdomen was slightly sensitive, but almost as much to superficial as to deep pressure. At that time there was no apparent bruise to the abdomen, but he was advised to keep as quiet as possible, stay on a soft diet, take no purgatives, and to inform me if he should develop any more trouble. From the examination there did not appear to be any serious injury to the abdominal viscera. On July 14th, he returned to my office complaining of slightly more pain and tenderness in the abdomen. Examination revealed slightly more tenderness than at the first examination, and a little rigidity. Neither tenderness nor rigidity were present in any marked degree. He was advised to go to bed, use an ice-bag on the abdomen and stay on a soft diet. His symptoms did not progress any under this palliative treatment until July 18th when he complained of more pain in the right abdomen. Rigidity and tenderness were greater than at the previous examinations and he had a temperature of 99. He was advised to remain in bed and follow previous instructions. I saw him again the next day and his condition had become aggravated. On the morning of July 20th, about two A. M., I was called to see him and found his condition growing decidedly worse, with symptoms of localizing peritonitis on the right side. Rigidity and tenderness had increased and were most marked at McBurney's point and immediately above. I sent him to the hospital early that morning. A leucocyte count was made which showed 21,000 cells, with 84 per cent polymorphonuclears. Urinalysis was negative. He was tender to very slight pressure and kept his knees flexed on his abdomen. Laparotomy was decided upon and a pre-operative diagnosis of intestinal injury with localized peritonitis on the right side was made. I did a right rectus incision and found the following conditions present: there was a bruised condition of the abdominal muscles through the entire wall; bruise to the ascending colon at and immediately above the ilieocecal junction and the appendix was acutely inflamed. The appendix was not simply congested, but infected. There were no bands, or adhesions, or evidences of previous trouble. The appendix was removed and he made an uneventful recovery.

Summary

I believe this to be a case of appendicitis which was undoubtedly precipitated by the injury; not the kind of a case that is usually referred to in literature as traumatic appendicitis, where they usually speak of trauma only

in the sense of producing enough injury to rupture or severely lacerate the appendix so that symptoms would develop immediately, but a bruised and over-distended condition of the appendix which caused infection to take place gradually. When the accident occurred, the colon was struck suddenly, forcing some of its contents into the appendix, over-distending it, and diminishing its blood supply, thereby lowering its resistance and permitting those normally inactive bacteria to become active and gain entrance to the wall of the appendix. This evidently is a true case where lowered resistance caused infection to take place. In these cases it is to be expected that the symptoms will develop slowly and gradually.

His back was in apposition to the approaching automobile when the accident occurred, and, of course, he was unaware of impending danger; therefore, the abdominal muscles were relaxed, which would account for the internal injuries, with so little external evidence of such injury.

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New Monroe Building.

THE DEVIL'S MASQUE—A DREAM.*

By ROY K. FLANNAGAN, M. D., Richmond, Va.
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FOREWORD

The following fantasy is written in the hope that the terrible social situation it depicts may in this graphic form find a wider circulation and consequently stir larger numbers to thought and action on the grave problem of combating the Venereal Peril—a racial cancer to whose presence the bulk of the medical profession is still passive, and the general public in so far as it is informed covers up and leaves it alone.

The attitude of the average physician toward reporting venereal disease, if due to a supposed allegiance to the Hippocratic Oath, is so undoubtedly by reason of a misapprehension of that document. The ethics of the Father of Medicine were of too high a character for that document to bear any such meaning. Hippocrates' admonition to those who practice the healing art, not to gossip about their patients, cannot without violence to his standards, be used as a warrant to conceal from proper health authorities the presence of diseases that threaten the very foundations of society.

The tendency on the part of many physicians to withhold from health authorities all information concerning syphilis and gonorrhea in their practice, as well as suspicious cases of other contagious diseases, if persisted in can only accentuate the feeling now growing in the public mind that the medical profession and the Public Health have but little in common. It is beginning to be felt that the health of the public is a layman's matter and must be administered by laymen if Disease, the basis of the doctor's livelihood, is to be conquered. Can it be possible that physicians in any great number are willing that such a feeling be hardened into conviction? This will undoubtedly be the case if more active support of health measures is not given by them.

In regard to certain allusions found in the Masque, it may be said that there are few physcians and druggists who will be disposed to dispute the implication found in the "Ode of the Damned Young Men" that the unmarried virtuous male is a "rara avis" and that the venereally diseased, married and single one is by no means uncommon.

Social workers and clinicians can, if they will, testify to the awful ravages of venereal disease among prostitutes and loose women generally. Those who work with the mentally defective will without doubt agree with the "Ancient Sisterhood" in their strictures upon mankind, as well as in their generous thought for the throngs of feebleminded among their number.

It is not likely that any gynaecologist will be found to combat the indictment found in the "Wail of the Unsexed," and to comment upon the brief "Song of the Completely Unfit" is superfluous.

For the physician, however, not to give his most unselfish and serious thought to ways and means of reducing the number of these derelicts is for him to fail in the first responsibility of knowledge. He is in the position of a leader by reason of his first-hand acquaintance with the problem. Surely he will not default on that leadership!

*Read before the Richmond Academy of Medicine, May, 1925.

THE DEVIL'S MASQUE

A DREAM—TIME, A. D., 1918.

PROLOGUE

A clinic physician of learning and light,
  Assigned to venereal control,
Lay down on his bed one hot midsummer night,
  Worn out both in body and soul.

The scenes of the day fast revolved through his head,
  For women and men by the score;
Their bodies diseased, their self-respect dead
  Had thronged through his hospital door.

These passed in review through his over-wrought brain
  A tragic continuous stream,
Until when it seemed that he must go insane
  Came a vivid and terrible dream.

THE SCENE

The scene of the vision was lurid with glare,
  A vast and cavernous domain.
On a throne-like escarpment approached by a stair,
  Sat the patron of woe and of pain.

Before him was gathered a polyglot throng,
  From all of the war-ridden states;
From hell upon earth the dark Lord of all wrong
  Brought those who obeyed his mandates.

'Twas Satan at home in his central abode
  Who, musing on matters mundane,
Had called in his travelling imps from the road,
  To check up his loss and his gain.

THE DILEMMA.

He found that his profits exceeded by far
  His losses in nineteen eighteen,
The nations of earth engaged in the war,
  Sent crowds such as he'd never seen.

But a large force of devils with nothing to do
  And hell filling up to the brim,
Gave Satan a task to dispose of his crew
  To prevent pandemonium grim.

Then one of the boldest young imps of them all
  Said, "Sire, now that war does our work,
Please start up a movie, or give us a ball
  To amuse us while down in this murk."

THE ORDER

The idea appealing, the satanic mind
  Determined at once on a play.
He called an old author and told him to find
  Something good to produce right away.

The playwright then asked and was given the power
  To tap the resources of Hell.
He sent out the devils and told them to scour
  The depths, and attendance compel.

Advantage he had over former assays,
  Unique the advantage you'll see.
While play-actors usually all have *to seem*,
  His now had but simply *to be*.

THE CAST

The inmates of Hell are tragedians all,
  And need no assistance from art.
Deceptions of Earth now no longer enthrall,
  No need now to act any part.

The dramatist had but to gather his cast,
  And teach them to march forth in line,
Stir listless and weak ones to tell of their past,
  And respond when he gave them the sign.

The curtain rang up to the cheers of the throng,
  Upon a vast platform there strode
A troop of young men slowly stalking along,
  And solemnly chanting this ode.

ODE OF THE DAMNED YOUNG MEN.

We represent man,
  The every day man,
Who loves and who leaves
  But takes what he can.

We sought after fun,
  Each sad mother's son.
We took our full share,
  But now we are done.

No virtue had we,
  Our bodies were free
(Mankind in the mass,
  In morals agree.)

But this was not all,
  The fruit of the fall,
In most of our troop
  Was bitterest gall.

Venereal disease
  Molested our ease;
We drank Vice's cup
  And came to the lees.

Our efforts at cure
  Of this horror impure,
Were doubtful or vain,
  We did not make sure.

We married at last,
  And stand now aghast,
We brought to our homes
  This blight from the past.

We fired a train
  Of illness and pain,
And left to our sons
  The black brand of Cain.

Fair tribute to Hell
  We properly dwell
In Plutonic Shades
  And do not rebel.

We state thus our case,
  And now yield our place
To those "lights of love"
  We led in the race.

THE SISTERS OF SORROW

This crowd of young roues then passed out of sight
  And next on the stage there appeared
A concourse of women resentful and white
  With a song most courageous and weird.

Fair Helen of Greece, Messalina of Rome,
  Cleopatra and Catherine the Great
Rubbed elbows with harlots from Paris and Nome
  In a chorus of satire and hate.

Now some of them sang in a sad monotone
  And others with anger were shrill,
A few broke the chant with a laugh or a groan,
  While many were silent and still.

SONG OF THE ANCIENT SISTERHOOD.

We are the Ancient Sisterhood
Whose heart and head and hand
Have had their part in history,
Since Pharaoh ruled his land.

We "wise ones" have no just complaint,
We took our chance with fate,
We chose our course we had our joy
With many, many a mate.

And when the inevitable blight
And blood taint came to us
We passed it on to those young blades
So gayly amorous.

And thus the score was evened up
As far as we're concerned.
But look at these poor feeble souls!
What Hell have these girls earned?

Who have no minds, who are but babes
The prey of bestial man.
They lack the will to fight him off
So yield him all they can.

Now yet again—what sport is there
In chasing silly sheep,
You devils ought to be ashamed
To take your fun so cheap!

Why, only folks on Earth do that,
Poor spineless, lecherous men,
Shall Hell's own royal messengers
Deal thus with women then?

And now we take ourselves from view
And give our place to those
Whose pangs on Earth have far outmatched
The worst of Satan's woes.

DERELICTS OF DISEASE.

Then slowly across the broad platform there came
A limping and stumbling array
Of women, pale, wizened, dejected and lame
And loath to take part in the play.

Young wives were they all when they lived upon Earth
Where, bright and as happy as birds,
They yielded their lives amid revel and mirth
To the honey-sweet magic of words.

The unrestrained past of their husbands had brought
Its crop of wild oats to their door.
Venereal sickness though dormant had wrought
Red ruin that none could restore.

They garnered ill health and they suffered neglect
No babes to their arms ever came
Their bodies unsexed and their happiness wrecked
They stand now immune to the flame.

With sighing and tears and with many a moan
And futile attempts at control,
They chant in a low pitched tremulous tone
This wail from the depth of the soul.

THE WAIL OF THE UNSEXED.

We have passed out of life
With its turmoil and strife
To Satan's dire, hateful abode,
But the sadness and pain
That we now must sustain
Has not added aught to our load.

From our earliest years
We had freedom from tears,
Our paths were with primroses gay;
So with dance and with song
Fashion bore us along,
No clouds ever darkened our day.

But the men of our set
Caught us soon in the net
Of marriage, the goal of our kind
Our fond parents cared not
Whether roue or sot,
If station and gold he could find.

The young men whom we chose
Were all taken from those
With hearts only bent upon fun
They had gone "down the line"
With lewd women and wine,
Forgetting the girls they had won.

(The disease of the slum
To the palace will come,
When men from the palace go down
To the red lighted way
With its denizens gay
Secluded but always in town.)

So we reaped what they sowed
And upon the long road
Of Eternity's darkness we drift,
He who gave us our name
Gave us also our shame
And Hell was bestowed with the gift.

ULTIMATE RUIN.

Sad wraiths! these then moved to their place in the dark
And out from the doors at the side,
A crowd which e'en stirred in the audience a spark
Of compassion came on like a tide.

Poor babes blind from birth were borne feebly along
By idiots crippled and scarred,
While diseased and insane unite in a song
With the crime-stained ancestrally marred.

SONG OF THE COMPLETELY UNFIT.

Through ages on ages
In Earth and in Hell,
While man's passion rages,
Is sounded our knell.

Mad lust and infection
Have blackened us all,
Man's darkest defection
Accounts for the pall.

Thus blasted and broken
By prenatal blight,
Our doom thus was spoken,
"Go forth to the night!"

The Earth had no treasure
That we could employ
And Heav'n has no pleasure
That we can enjoy.

No place in the world,
No place in the sky,
To Hell we are hurled
The day that we die.

Then slowly and sadly this throng moved off stage
Mid silence profound and complete,

The imps sat there quiet, it seem for an age
E're anyone moved from his seat.

The bold little devil who issued the call
For a play to instruct and amuse,
Then 'rose to his feet and thus spoke to them all,
In an effort to banish their blues.

THE PROTEST OF THE IMPS.

Now Imps of Satan you have seen
The Masque of Crimson Sin,
What do you think of this black thing
We are charged with dabbling in?

Must foul disease our ally be
To furnish fuel here?
Can we not find a cleaner tool.
Upon a sin-struck sphere?

Shall we take part in harlotry
Or harry helpless maids,
And chase poor feeble-minded waifs
Like human renegades?

Does our success depend upon
Poor sportsmanship and lust?
It is not true, and we protest
The charge is most unjust.

Let's send the word to ends of Earth,
To men where'er they dwell,
That they may know of some vile deeds
Discountenanced in Hell.

With one accord they shouted "aye"
In tones so loud and clear,
That every man and maid on Earth
It seemed must surely hear.

ENVOI.

The sleeping doctor with a start
Awoke to heavy toil;
But with a brighter spirit far
He faced the day's turmoil.

Renewed in courage, strong in faith
That right would rule sometime,
Since imps of Hell themselves reject
Man's darkest social crime.

State Office Building.

CONGENITAL SYPHILIS OF THE LARYNX IN CHILDREN—WITH REPORT OF CASE.*

By ELBYRNE G. GILL, M. D., Roanoke, Va.

Syphilis of the larynx is estimated as comprising from 1 to 15 per cent of all cases of syphilis. Its occurrence in the pharynx is given as about 10 per cent and in the nose as nearly 3 per cent. About one-fifth of all the cases of syphilis appear, therefore, to affect some portion of the upper respiratory tract.

Acquired syphilis of the larynx occurs most frequently between the twentieth and fiftieth years of life. In the congenital form it appears either in the first few months of life or about the age of puberty, most frequently during the first few months. When it occurs soon after birth the lesions are usually secondary. If the secondary stage is completed *in utero*. the disease may only become manifest in the third stage after the lapse of several (usually from two to fifteen) years.[1]

Laryngitis of late hereditary syphilis is quite rare and is likely to be overlooked because of the difficulties in the way of a thorough examination and because the disease is usually painless. Strouss has collected fourteen cases between the ages of three and fifteen years and added three of his own. The parts most frequently affected are: first, the epiglottis; second, the aryteno-epiglottic folds; third, the posterior laryngeal wall.[2]

The sypmptoms are those of chronic laryngitis, hoarseness, sometimes aphonia, and in a few cases chronic laryngeal stenosis.

Differential Diagnosis: The two diseases for which this condition is most likely to be mistaken are malignant growths and tuberculosis of the larynx. Age of the patient would in a measure eliminate malignancy. Tuberculosis of the larynx is rarely primary; more usually it is secondary to pulmonary tuberculosis. Syphilis can be diagnosed by manifestations of syphilis elsewhere in the body, as well as by the Wassermann and therapeutic tests.

REPORT OF CASE

B. J., age twelve years, male, school boy, consulted me for the first time, November 29, 1924.

Chief Complaint.—For past eight or nine months patient's speech has been impaired; he sleeps with mouth open, and has difficulty in breathing, especially at nights.

Personal History.—The patient was the second of six healthy brothers and sisters. Has had chicken pox, measles, mumps, scarlet fever, influenza (twice). History otherwise negative.

Family History.—Father, age forty-seven, living and well. Mother died two years ago, aged thirty-seven, her trouble having been diagnosed sometime previously by the family physician as well as by a laryngologist as cancer of the larynx.

Her case was then referred to X-ray specialist for X-ray therapy. She received a number of treatments (about fifty) for this condition. One week before mother's death Wassermann was made, report being 4 plus; treatment was

*Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, at Jacksonville, Fla., January 19, 1925.

not given. The supposed malignant growth perforated the larynx and over-lying tissues a few weeks before death of patient, thus forming a fistulous opening. On close questioning, the father admitted having had a chancre twenty years ago. Has not had any treatment. Report of Wassermann test on other members of the family: child (age six) 4 plus, child (age ten) 3 plus, child (age fourteen) 1 plus, and two children (ages unknown) negative.

Physical Examination. — Mouth. Tonsils moderately enlarged but apparently clean; epiglottis is swollen and inflamed; arytenoepiglottic fold swollen and slightly edematous; left vocal cord markedly swollen and congested. Ear and nose examination all right. Teeth apparently all right. Functional examination of hearing:

	Watch	Whisper	Weber	Rinne	Fistula	L. Tone	U. Tone
Right ear	35 in.	30 ft.		Positive	Neg.	C-64	2 Tenths
Left ear	30 in.	30 ft.		Positive	Neg.	C-64	2 Tenths

Eye Examination: Lids and lachrymal apparatus negative. Conjunctiva, palpebral and bulbar negative. Cornea shows numerous dots, pen point to pen head in size, in the substantis propria, grayish white in color and distributed in central two-thirds of cornea, being more dense in pupillary area. No blood vessels or remnants of blood vessels seen in cornea. Anterior chamber of normal depth. Pupils react to light and accommodation. Pupils round and equal in size. Fundus: Lens clear, vitreous clear, disc oval, outlines normal, blood vessels normal, macula and periphery clear. No signs of anterior choroiditis could be found.

Diagnosis.—Keratitis; profunda punctata. Vision 20/40 each eye. Wassermann 4 plus. Chest examination shows normal thoracic outline, respiratory excursions full and free, costophrenic angles clear. Right and left lung clear from apex to base.

Treatment.—The patient was referred to his family physician for anti-luetic treatment, November 30, 1924. The brilliant effects of salvarsan have seldom been more impressed upon me than in this case. A patient with almost complete aphonia and embarrassed respiration was almost well in a week after its use. The patient has now had four doses of neo-salvarsan.

Outcome Examination of Larynx.—Swelling and edema gone and no hoarseness.

Comment.—I have not had time to review the literature completely so as to ascertain the number of cases of late hereditary syphilis of the larynx in children that have been put on record. During the past two years there have been no cases reviewed by the International Survey of the American Institute of Medicine. This, combined with the scant reference to the subject in our text-books on laryngology, leads me to the opinon that late hereditary syphilis of the larynx in children is a rare condition.

Summary

1. When hoarseness has become progressively worse over a period of nine months, we may be sure that some serious organic disease is present. 2. Absence of the characteristic Hutchinson teeth in children who have passed through the second dentition, also the absence of any ear or eye symptoms which are characteristic of hereditary syphilis. 3. Negative physical examination. 4. Relief of symptoms after the first administration of neo-salvarsan was most unusual. 5. Mother's death was most likely due to syphilis of the larynx. There was no history of miscarriage.

References.

1. Ballinger—"Diseases of Ear, Nose and Throat."
2. Holt—"Diseases of Children."

612 *MacBain Building.*

REPORT OF A CASE OF VINCENT'S ANGINA—WITH TREATMENT.

By R. E. MITCHELL, M. D., Richmond, Va.

Vincent's angina is an uncommon non-virulent, subacute, ulcerative, pseudo-membranous inflammation, which occurs in debilitated and insanitary subjects. It has been proven to be caused by the union of toxins from the spirillum of Vincent and the fusiform bacillus.

The lesions commonly involve one tonsil usually at its upper part, often spreading to the soft palate and the other tonsil or pharynx. It may also spread to the larynx or trachea, several cases having been reported. The lesion is covered with a pseudo-membrane, grayish white in color, surrounded by a red ring of inflammation. There may be, and generally are, several patches of involvement, with no appreciable connection but separated by healthy tissue. The membrane, when an attempt to remove it is made, is found to be granular and cheesy in consistency, with an ulcerative area beneath, which bleeds freely. The membrane returns after forcible removal.

The symptoms vary a great deal from a mild tonsillitis to a very severe ulcerated throat,

profuse glandular enlargement, general malaise, chilly sensations, and temperature as high as 101 to 102.

The diagnosis is made entirely from microscopic examination of a scraping from the lesion, easily made since the germ takes any of the dye stains.

The prognosis is usually good. Recurrences are to be looked for and laryngeal involvements may become quite serious.

The treatment of the past has been applications of tincture of iodine, mercurochrome, solutions of nitrate of silver, zinc sulphate, and, more recently, solutions of salvarsan. These measures have been used with varying results, but have required long drawn out treatments, and some cases have undoubtedly become chronic with no hope of becoming permanently cured. The treatment par excellence and with which this case report chiefly deals is intravenous injections of 1 per cent solution of antimony and potassium tartrate. It seems almost a specific, at least my own experience would seem to justify this assertion.

Mrs. A., twenty-six years of age, married, two children, with history of pellagra one year ago, was attacked with a severe sore throat, chiefly right side, with considerable pain on swallowing and talking. Glands of throat on this side very much enlarged and tender. Her family physician was called in and, finding a membrane, suspicioned diphtheria and immediately gave her 10,000 units of antitoxin. A swab from her throat was sent to the City Health Department, which later came back negative for diphtheria. On the second day her doctor, not finding her improved, repeated the dose of antitoxin with the same result. The following day I was asked to see the patient and at once suspicioned Vincent's angina, the picture being typical. A scraping from the lesion was made, which proved positive. On the third day after seeing her, we gave 5 c.c. of 1 per cent solution of tartar emetic, skipping the next day, and repeated the dose on the third day. She immediately began to feel better and when the day arrived for her third treatment all the membrane had disappeared, the adenitis had greatly subsided, and the patient was out of bed and down stairs with her family. She has received three subsequent injections, but clinically she is well.

409 *Medical Arts Building.*

Correspondence

Senator Mapp's Record in Regard to the de Collard Bill.

To the Editor:

Today, July 2, 1925, I received a letter from Senator G. Walter Mapp, in which he protests against the record of his connection with the de Collard bill, Senate Bill No. 55, as printed in the communication by me, "Chiropractic and Poropathy," which appeared in the Virginia Medical Monthly, June, 1925.

This record is a reproduction of the same record which was used in the campaign of Senator Trinkle, and which was prepared by a lawyer for me for use during the primary in which Senator Trinkle was a candidate for governor. At that time Senator Mapp was not a candidate for a State office, and his name was mentioned only as moving a reconsideration of the bill which had been defeated as an emergency measure. The doctors in the Senate were recorded as voting against the bill only to show how the representatives of the medical profession in the Senate regarded it. The complete records, however, show that while Senator Mapp did move to reconsider this bill after it had been defeated as an emergency measure, he voted against it on its passage.

In justice to Senator Mapp I am glad to make this statement, and trust you will give this letter due prominence.

On two previous occasions I had written to Senator Mapp asking for his record on this matter, but my efforts to secure this information have been overlooked by him until today.

J. Shelton Horsley.

Analyses, Selections, Etc.

Treatment of Chancroid With Tartar Emetic Solution Intravenously.

Herman Goodman, of New York City, proposes the use of solutions of tartar emetic intravenously in the treatment of chancroid, following his experiences with this drug in the tropics in the therapy of granuloma inguinale.

In Goodman's experience, the diagnosis of chancroid most often rests on clinical observation; absence of Spirocheta pallida on dark field examination; and absence of the so-called Calimato-bacterium granulomatis of inguinal granuloma. The search for Ducrey bacilli in

smears has not been fruitful, and the utilization of culture methods has not been routine. The Wassermann reaction is of negative aid.

The patients have presented themselves for treatment after extension to the draining glands, and several after ineffective antisyphilitic treatment. Other patients had been under observation for urethritis because of a purulent discharge exuding from an acquired phimotic prepuce. Goodman uses the actual cautery knife to make a dorsal slit when indicated rather than the cold knife because of the possible danger of opening blood and lymph channels. Local cleanliness with soap and water, and immersion of the affected part in warmed mercuric chloride was insisted upon.

The innovation in treatment is the use intravenously of solutions of tartar emetic or antimony potassium tartrate. The drug is given in concentration of 1:100. A commercial sterilized 1 per cent solution, standardized and biologically tested, contained in 10 c.c. hermetically sealed ampoules has been used. The initial dose intravenously has been 5 c.c. of the 1:100 solution, given once every second day or at longer intervals to once in five days. The number of injections has varied from four to eight. The dose may be increased by 1 c.c. at each injection, but no dose greater than 12 c.c. has been administered. There have been no ill effects.

The use of antimony potassium tartrate in chancroid is recited in case histories. It is hoped that the experiences of others will warrant further publication.—(*Journal of Urology*, 13:489, April, 1925).

Unperforated Ulcers of the Terminal Ileum, Symptomatically Simulating Appendicitis.

In a paper read at the meeting of the American Medical Association before the Section on Surgery, General and Abdominal, May 27, 1925, Dr. J. Shelton Horsley, Richmond, Va., discussed the symptoms of appendicitis. He stated that the appendix has a wide range of locality. When in its normal position the inflamed appendix gives the typical symptoms of pain beginning in the epigastrium or around the navel, with subsequent pain, tenderness and muscle spasm in the right iliac fossa. When abnormally placed it may cause pain and tenderness in the median line, the pubic region, along the iliac crest or around the gall-bladder. On the other hand, any one of many other diseases may give the symptoms of appendicitis and must be differentiated. Symptoms, however, which are due to a lesion in the intestinal tract near the appendix may closely simulate those of appendicitis and are more difficult to distinguish. The importance of bearing in mind such lesions is emphasized. Operations for appendicitis are sometimes undertaken without due regard for the possibilities of other lesions of the gastro-intestinal tract, and the surgeon should be competent to deal with any other surgical condition that may be present.

Three cases are reported with symptoms of appendicitis having tenderness and muscle spasm in the lower abdomen. A diagnosis of appendicitis was made in each case. In two, at operation a solitary tuberculous ulcer was found in the ileum, and a resection of the terminal ileum with appendectomy was done. The third patient, a boy ten years of age, was admitted to the hospital with a diagnosis of acute appendicitis. At operation the appendix was found to be moderately congested and was removed. The terminal ileum was greatly enlarged and congested. About nine inches of the ileum and the cecum and part of the ascending colon were resected. Grossly the lesion appeared to be tuberculous, but careful microscopic study showed the tissue to be simple inflammatory. All three cases made a satisfactory recovery.

The technic of resection of the terminal ileum is discussed. The method to be used depends largely upon the local conditions. The active peristalsis and the small amount of bacteria in the upper jejunum demand different methods of procedure from those indicated in the more slowly acting ileum whose contents are filled with bacteria. Thus, in the lower ileum it is important to use a technic which will prevent contamination, even though it gives a smaller lumen of the bowel, while in the upper jejunum with fewer bacteria the importance of an ample caliber dominates the situation. The technic of Kerr is excellent in many of these cases of resection of the lower ileum, but when there is much fat a lateral anastomosis should be done. If there has been obstruction or if the cecum and colon are included in the resection, an enterostomy with a soft rubber catheter seems indicated.

The Truth About Medicine

In addition to the articles enumerated in our letter of April 30, 1925, the following have been accepted:

Lederle Antitoxin Laboratories
Poison Ivy Extract—Lederle (In Almond Oil)
Poison Ivy Extract—Lederle (In Almond Oil), 1 c.c.
Rabies Vaccine—Lederle (Semple Method)

H. K. Mulford Company
Ash Tree Pollen Dried—Mulford; Bermuda Grass Pollen Dried—Mulford; Box Elder Pollen Dried—Mulford; Canary Grass Pollen Dried—Mulford; Careless Weed Pollen Dried—Mulford; Cocklebur Pollen Dried—Mulford; Corn Pollen Dried—Mulford; Cottonwood Pollen Dried—Mulford; Daisy Pollen Dried—Mulford; Dandelion Pollen Dried—Mulford; Dock Pollen Dried—Mulford; False Ragweed Pollen Dried—Mulford; Goldenrod Pollen Dried—Mulford; High Ragweed Pollen Dried—Mulford; Johnson Grass Pollen Dried—Mulford; June Grass Pollen Dried—Mulford; Lamb's Quarters Pollen Dried—Mulford; Low Ragweed Pollen Dried—Mulford; Maple Pollen Dried—Mulford; Marsh Elder Pollen Dried—Mulford; Mountain Cedar Pollen Dried—Mulford; Mugwort Pollen Dried—Mulford; Oak Tree Pollen Dried—Mulford; Orchard Grass Pollen Dried—Mulford; Perennial Rye Grass Pollen Dried—Mulford; Plantain Pollen Dried—Mulford; Redroot Pigweed Pollen Dried—Mulford; Redtop Pollen Dried—Mulford; Russian Thistle Pollen Dried—Mulford; Rye Pollen Dried—Mulford; Sagebrush Pollen Dried—Mulford; Shad Scale Pollen Dried—Mulford; Sheep Sorrel Pollen Dried—Mulford; Slender Ragweed Pollen Dried—Mulford; Sugar Beet Pollen Dried—Mulford; Sunflower Pollen Dried—Mulford; Sweet Vernal Grass Pollen Dried—Mulford; Timothy Pollen Dried—Mulford; Velvet Grass Pollen Dried—Mulford; Walnut Tree Pollen Dried—Mulford; Western Ragweed Pollen Dried—Mulford; Wormwood Pollen Dried—Mulford.
Insulin—Mulford
Insulin—Mulford; 10 units, 5 c.c.
Insulin—Mulford; 20 units, 5 c.c.
Insulin—Mulford; 40 units, 5 c.c.

Parke, Davis & Co.
Typhoid Vaccine (Prophylactic) 30 c.c.
Typhoid Paratyphoid Vaccine (Prophylactic) 30 c.c.

Powers-Weightman-Rosengarten Co.
Stovarsol
Stovarsol Tablets 0.25 Gm.

Swan-Myers Co.
Annual Sage Concentrated Pollen Extract—Swan-Myers; Ash Concentrated Pollen Extract—Swan-Myers; Black Walnut Concentrated Pollen Extract—Swan-Myers; Blue Grass Concentrated Pollen Extract—Swan-Myers; Box Elder Concentrated Pollen Extract—Swan-Myers; Buckhorn Concentrated Pollen Extract—Swan-Myers; Burweed Marsh Elder Concentrated Pollen Extract—Swan-Myers; Cocklebur Concentrated Pollen Extract—Swan-Myers; Corn Concentrated Pollen Extract—Swan-Myers; Cottonwood Concentrated Pollen Extract—Swan-Myers; False Ragweed Concentrated Pollen Extract—Swan-Myers; Giant Ragweed Concentrated Pollen Extract—Swan-Myers; Goldenrod Concentrated Pollen Extract—Swan-Myers; Hemp Concentrated Pollen Extract—Swan-Myers; Hickory Concentrated Pollen Extract—Swan-Myers; Lamb's Quarters Concentrated Pollen Extract—Swan-Myers; Marsh Elder Concentrated Pollen Extract—Swan-Myers; Mugwort Concentrated Pollen Extract—Swan-Myers; Oak Concentrated Pollen Extract—Swan-Myers; Orchard Grass Concentrated Pollen Extract—Swan-Myers; Prarie Sage Concentrated Pollen Extract—Swan-Myers; Quailbrush Concentrated Pollen Extract—Swan-Myers; Red Sorrel Concentrated Pollen Extract—Swan-Myers; Redtop Concentrated Pollen Extract—Swan-Myers; Russian Thistle Concentrated Pollen Extract—Swan-Myers; Sagebrush Concentrated Pollen Extract—Swan-Myers; Short Ragweed Concentrated Pollen Extract—Swan-Myers; Slender False Ragweed Concentrated Pollen Extract—Swan-Myers; Southern Ragweed Concentrated Pollen Extract—Swan-Myers; Spiny Amaranth Concentrated Pollen Extract—Swan-Myers; Sudan Grass Concentrated Pollen Extract—Swan-Myers; Sycamore Concentrated Pollen Extract—Swan-Myers; Timothy Concentrated Pollen Extract—Swan-Myers; Western Ragweed Concentrated Pollen Extract—Swan-Myers; Western Water Hemp Concentrated Pollen Extract—Swan-Myers.

Change of Agency.

Sulfarsenol, formerly distributed by Charles Leich and Co., is now distributed by the Anglo-French Drug Co., which supplies .06, .12, .18, .30, .42, .60 Gm. ampules. The Council has continued the acceptance of Sulfarsenol under the new distributor.

NEW AND NON-OFFICIAL REMEDIES

Typhoid Vaccine X Plain.—A typhoid vaccine (New and Non-official Remedies, 1925, p. 360), marketed in single 1 c.c. carpule (tube) packages containing 500 million killed bacteria per c.c.; in packages of ten 1 c.c. carpules, each containing 500 million killed bacteria per c.c.; in packages of four 1 c.c. carpules; each containing 1,000 million killed bacteria per c.c. and in packages of ten 1 c.c. carpules, each containing 1,000 million killed bacteria per c.c. Cook Laboratories, Inc., Chicago.

Typhoid Vaccine XX Combined.—A typhoid vaccine (New and Non-official Remedies, 1925, p. 360), marketed in single 1 c.c. carpule (tube) packages containing 500 million killed bacillus typhosus, 375 million killed bacillus paratyphosus A, and 375 million killed bacillus paratyphosus B per c.c.; in packages of ten 1 c.c. carpules each containing 500 million killed bacillus typhosus, 375 million killed bacillus paratyphosus A and 375 million bacillus paratyphosus B per c.c.; in single c.c. carpule packages containing 1,000 million killed bacillus typhosus, 750 million killed bacillus paratyphosus A and 750 million killed bacillus paratyphosus B per c.c. and in packages of ten 1 c.c. carpules each containing 1,000 million killed bacillus typhosus, 750 million killed bacillus paratyphosus A and 750 million killed bacillus paratyphosus B per c.c. Cook Laboratories, Inc., Chicago.

Acne Vaccine Combination X.—A mixed bacterial vaccine (New and Non-official Remedies, 1925, p. 365) marketed in packages of four 1 c.c. carpules (tubes) containing, respectively 262 million, 500 thousand, 525 million, 787 million, 500 thousand and 1,050 million killed bacteria per c.c.; in single 1 c.c. carpule packages containing 1,050 million killed bacteria per c.c. and in packages of ten 1 c.c. carpules each containing 1,050 million killed bacteria per c.c. Cook Laboratories, Inc., Chicago.

Caprokol. — Hexylresorcinol — S. & D.—Normal hexylresorcinol, containing not more than 5 per

cent. of the intermediate product hexylresorcinol. Caprokol possesses marked germicidal properties, is stated to have a phenol coefficient of 45 and to be relatively nontoxic when administered by mouth. When administered, it imparts definite germicidal properties to the urine. Administration of caprokol to normal individuals caused secretion of urine which killed bacillus coli and staphylococcus albus, but the effect of the drug was not constant. Caprokol is proposed for the treatment of urinary infections. The drug is marketed in the form of capsules hexylresorcinol—S. & D., each containing 0.15 Gm. dissolved in olive oil. Sharp and Dohme, Baltimore.

Insulin—Stearns, Single Strength.—10 c.c. vials containing in each c.c. 10 units of insulin—Stearns (New and Nonofficial Remedies, 1925, p. 174). Frederick Stearns and Company, Detroit.

Insulin—Stearns, Double Strength.—10 c.c. vials containing in each c.c. 20 units of insulin—Stearns (New and Non-official Remedies, 1925, p. 174). Frederick Stearns and Company, Detroit.

Insulin—Stearns, Quadruple Strength—10 c.c. vials, each containing 40 units of insulin—Stearns. (New and Non-official Remedies, 1925, p. 174). Frederick Stearns and Company, Detroit.

Scarlet Fever Streptococcus Antitoxin.—An antitoxic serum prepared by immunizing animals against the toxin of the hemolytic streptococcus of scarlet fever. It is prepared (a) after the method of G. F. Dick and G. H. Dick, by immunizing horses by injection of soluble toxins of strains of hemolytic streptococci, which have produced experimental scarlet fever in human beings and (b) by the method of A. R. Dochez, by which horses are immunized against the specific scarlet fever organism by the localization of the living streptococci in a subcutaneous agar nodule. Much evidence has accumulated to show that the specific organism of scarlet fever has been determined and that the administration of a serum containing the antitoxin produced by this organism will favorably affect the course of scarlet fever.

Scarlet Fever Streptococcus Antitoxin—Lilly (Unconcentrated).—It is prepared by the Dochez method. Each c.c. neutralizes at least 10,000 skin test doses of scarlet fever toxin. Marketed in packages of one vial containing 20 c.c.—Eli Lilly and Co., Indianapolis, Ind.

Scarlet Fever Streptococcus Antitoxin—Lilly. (Refined and Concentrated).—It is prepared by the Dochez method. Each c.c. neutralizes at least 20,000 skin test doses. Marketed in packages of one vial containing 10 c.c.—Eli Lilly and Co., Indianapolis, Ind.

Scarlet Fever Streptococcus Antitoxin—U. S. S. P.—It is prepared by the method of Drs. Dick. Each c.c. neutralizes at least 1,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 10 c.c. (prophylactic dose); and in packages of one vial containing 20 c.c. (therapeutic dose). United States Standard Products Co., Woodworth, Wis. (Jour. A. M. A., May 2, 1925, p. 1338).

Resorcinol Monoacetate.—Resorcin acetate.—The monoacetic ester of resorcinol. The action of resorcinol monoacetate is similar to that of resorcinol, although milder and more lasting, because of the gradual liberation of resorcinol. Resorcinol monoacetate is used in the treatment of acne, sycosis, chillblains, and particularly in the treatment of alopecia and seborrhea. It is applied in 5 to 20 per cent. ointments and as a scalp lotion, in 3 to 5 per cent. alcoholic solutions.

Resorcinol Monoacetate—Eastman Kodak Co.—A brand of resorcinol monoacetate—N. N. R. (See preceding article). Eastman Kodak Co., Rochester, N. Y. (Jour. A. M. A., May 9, 1925, p. 1421).

Lunosol.—Argenti Chloridum Colloidale Saccharatum—Hille.—A preparation of colloidal silver chloride containing silver chloride, 10 per cent., and sucrose, 90 per cent. Lunosol has antiseptic and germicidal properties. It causes neither irritation of the mucous membrane nor coagulation of albumin even in concentrated solutions; it does not stain the skin. Lunosol is intended for the prophylaxis against and treatment of infections of the accessible mucous membranes, such as the genito-urinary tract and the eyes, ear, nose and throat. Lunosol is sold in bulk and in capsules containing six grains.—Hille Laboratories, Inc., Chicago.

Rabies Vaccine (Semple).—Anantirabic vaccine (New and Non-official Remedies, 1925, p. 342, prepared according to the general method of David Semple (phenol killed). It is marketed in packages of seven syringes, each containing 2.5 c.c.—Cutter Laboratory, Berkeley, Calif. (Jour. A. M. A., May 16, 1925, p. 1497).

Bromsulphalein—H. W. & D.—Disodium phenoltetrabromphthalein-sulphonate. — The disodium salt formed by the interaction of tetrabromphthalic acid (or anhydride) and phenol with subsequent sulphonation. It contains from 37 to 38 per cent of bromine. Bromsulphalein—H. W. & D. is used as a test of liver function; the amount remaining in the blood stream after intravenous injections as determined colorimetrically, is considered a measure of hepatic dysfunction. Bromsulphalein—H. W. & D., is supplied in ampules containing 3 c.c. of a 5 per cent solution. Hynson, Westcott and Dunning, Baltimore. (Jour. A. M. A., May 23, 1925, p. 1573).

Cencentrated Pollen Extracts—Swan-Myers.—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent glycerin and 33 per cent of a solution containing sodium chloride, 2.5 Gm., and sodium bicarbonate, 2.7 Gm., in distilled water, 1,000 c.c. For actions, uses and dosage, see Allergic Protein Preparations, New and Non-official Remedies, 1925, p. 278. The following concentrated pollen extract—Swan-Myers, are marketed in 5 c.c. vials: Annual Sage Concentrated Pollen Extract—Swan-Myers; Ash Concentrated Pollen Extract—Swan-Myers; Black Walnut Concentrated Pollen Extract—Swan-Myers; Blue Grass Concentrated Pollen Extract—Swan-Myers; Box Elder Concentrated Pollen Extract—Swan-Myers; Buckhorn Concentrated Pollen Extract—Swan-Myers; Burweed Marsh Elder Concentrated Pollen Extract—Swan-Myers; Cocklebur Concentrated Pollen Extract—Swan-Myers; Corn Concentrated Pollen Extract—Swan-Myers; Cottonwood Concentrated Pollen Extract—Swan-Myers; False Ragweed Concentrated Pollen Extract—Swan-Myers; Giant Ragweed Concentrated Pollen Extract—Swan-Myers; Goldenrod Concentrated Pollen Extract—Swan-Myers; Hemp Concentrated Pollen Extract—Swan-Myers; Hickory Concentrated Pollen Extract—Swan-Myers; Lamb's Quarters Concentrated Pollen Extract—Swan-Myers; Marsh Elder Concentrated Pollen Extract—Swan-Myers; Mugwort Concentrated Pollen Extract—Swan-Myers; Oak Concentrated Pollen Extract—Swan-Myers; Orchard Grass Concentrated Pollen Extract—Swan-Myers; Prairie Sage Concentrated Pollen Extract—Swan-Myers; Quailbrush Concentrated Pollen Extract—Swan-Myers; Red Sorrel Concentrated Pollen Extract—Swan-Myers; Redtop Concentrated Pollen Extract—Swan-Myers; Russian Thistle Concentrated Pollen Extract—Swan-Myers; Sagebrush Concentrated Pollen Extract—Swan-Myers; Short Ragweed Concentrated Pollen Extract—Swan-Myers;

Slender False Ragweed Concentrated Pollen Extract—Swan-Myers; Southern Ragweed Concentrated Pollen Extract—Swan-Myers; Spiny Amaranth Concentrated Pollen Extract—Swan-Myers; Sudan Grass Concentrated Pollen Extract—Swan-Myers; Sycamore Concentrated Pollen Extract—Swan-Myers; Timothy Concentrated Pollen Extract—Swan-Myers; Western Ragweed Concentrated Pollen Extract—Swan-Myers; Western Water Hemp Concentrated Pollen Extract—Swan-Myers. Swan-Myers Co., Indianapolis, Ind.

Rabies Vaccine—Lederle (Semple Method).—An antirabic vaccine (New and Non-official Remedies, 1925, p. 342), prepared according to the general method of David Semple (phenol killed). It is marketed in packages of 14 syringes, each containing 2 c.c. Lederle Antitoxin Laboratories, New York. (Jour. A. M. A., May 30, 1925, p. 1634).

PROPAGANDA FOR REFORM.

Mercodel Not Accepted for N. N. R.—Mercodel (formerly called Lueside), is a preparation of metallic mercury proposed by the Seydel Chemical Company for the treatment of syphilis. A clinical study of Mercodel was made for the Council on Pharmacy and Chemistry by H. N. Cole, of the Dept. of Dermatology and Syphiology of the Western Reserve University School of Medicine. This study showed that while the drug produced marked therapeutic response, stomatitis might flare up suddenly in severe and even fatal form. Contrary to the claims of the manufacturer, inflammatory reactions were set up in the veins by repeated injections. On the basis of the available evidence, the Council informed the Seydel Chemical Company that Mercodel had been found unacceptable for New and Non-official Remedies. The firm presented a reply accompanied by letters from users of Mercodel. The submitted evidence did not refute, but rather confirmed, the conclusions which led to the rejection of Mercodel and made clear that the conditions for a safe administration have not yet been found. Therefore, the Council affirmed its rejection of Mercodel. It authorized publication of its original report along with a circular letter of the Seydel Chemical Company, which makes unwarranted use of the report by Cole and his collaborators, and a report on the supplementary evidence submitted by the Seydel Chemical Company. (Jour. A. M. A., May 2, 1925, p. 1373).

Whole Grain Wheat.—The guiding force behind the Whole Grain Wheat Company seems to rest in its president, C. H. Woodward, whose name appears extensively in the advertising. The company's advertising methods are ingenious and many. In addition to advertisements in the ordinary channels, newspapers, etc., the Whole Grain Wheat concern publishes a number of booklets and pamphlets, and gets out a monthly house organ, called *The Motive*, which has C. H. Woodward for its editor and publisher and chief contributor. Also, the concern, apparently organizes so-called "food clinics" in various towns and has as a subsidiary advertising organization the high-sounding "American Educational Food Council." This "Council" appears to be a mere "paper" organization.

Woodward argues that the cure for all diseases is Whole Grain Wheat, because it is *not* denatured, and will make up the deficiencies of the denatured food on which a crazy world is feeding. We are told that Whole Grain Wheat has cured such serious diseases as cancer, tuberculosis, Bright's disease, diabetes and colitis, as well as such conditions as "catarrh," constipation, asthma, bed-wetting in children, etc. So much for the exploitation methods of the Whole Grain Wheat Company. As to the product itself, it is, apparently, nothing more than whole grain wheat, partly cooked. (Jour. A. M. A., May 9, 1925, p. 1441).

Poison Oak Antigens.—A number of publications have appeared on the use of preparations of Rhus toxicodendron, claimed to prevent or alleviate the dermatitis produced by contact with Rhus toxicodendron. So far the Council on Pharmacy and Chemistry has not accepted any preparations of this kind, but has under consideration products made by the process used by Strickler and also by a different process. (Jour. A. M. A., May 9, 1925, p. 1445).

Solubility of Mercurochrome-220 Soluble in Alcohol.—Preliminary tests made in the A. M. A. Chemical Laboratory show that "mercurochrome-220 soluble" is much less soluble in alcohol than in water. With 95 per cent. alcohol a solution stronger than 0.01 per cent. could be made. (Jour. A. M. A., May 9, 1925, p. 1445).

Incompatibility of Mercurochrome-220 Soluble.—The A. M. A. Chemical Laboratory reports that when a solution of mercurochrome-220 soluble, 2 per cent., is mixed with an equal volume of a solution of quinin and urea hydrochloride, 10 per cent., a precipitate results. This chemical incompatibility appears to be due to the interaction of the rather acid solution of quinin and urea hydrochloride on the basic mercurochrome solution, whereby the sodium is split off and the relatively insoluble anhydride of mercurochrome together with some quinin, precipitates. (Jour. A. M. A., May 9, 1925, p. 1444).

Heliotherapy.—Generations of laymen as well as physicians have somehow assumed that part of the beneficial effects of outdoor life is attributable to sunshine. The influence of sunlight on health and disease is being unravelled gradually. An impetus to the study has been derived from the investigations of the biologic actions of light, particularly as they are related to dietary deficiencies. It is now clearly established that exposure to ultraviolet radiations will protect against the effects of the lack of antirachitic factors in the diet. Furthermore, foods may acquire antirachitic properties by being irradiated. Recent experiments on the effect of radiation on the bactericidal power of the blood indicate that the exposure of the skin of animals to a source of ultraviolet radiation gives an increased bactericidal power to the blood and serum. It has been found that irradiation for purposes of treatment must be carefully graded, since excessive exposures cause a deterioration of the blood no less striking than the improvement obtained with smaller doses. (Jour. A. M. A., May 16, 1925, p. 1498).

The Parathyroid Hormone.—Postoperative tetany has been relieved by parathyroid grafting. This fact, in connection with other obvious considerations, has prompted the belief that the parathyroid supplied an indispensable hormone to the body. The attempts to use desiccated gland substance or extracts in a replacement therapy have not, as a rule, been attended with success. However, Collip has succeeded in preparing extracts of parathyroid glands that control or prevent tetany in parathyroidectomized animals, and permit them to live. The active principle in this extract produces its effect by causing the calcium content of the bloom serum to be restored within normal limits. Coincident with the marked improvement observed after the use of the active extract, a rise in blood calcium has been noted. It has been found that an overdosage with the active extract may push the rise of blood calcium to a condition of hypercalcemia that may even become fatal. These findings on animals warn against careless applications of the new discovery to man and extol the advantage of animal experimentation as a prelimi-

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nary to human therapy. (Jour. A. M. A., May 16, 1925, p. 1499).

Some Wagner's Preparations Not Accepted for N. N. R.—The Council on Pharmacy and Chemistry reports that "Wagner's Artificial Vichy," "Wagner's Artificial Vichy Citrated," "Wagner's Artificial 'Ems' Kraenchen," "Wagner's Special 'C'," "Wagner's Carbonated Phosphate," and "Wagner's Piperazine Water," of W. T. Wagner's Sons Company, Cincinnati, are not acceptable for inclusion in New and Non-official Remedies. The Council found that all of these preparations were marketed with unwarranted therapeutic claims. In addition, Wagner's Artificial Vichy, Wagner's Artificial "Ems" Kraenchen, Wagner's Special "C" and Wagner's Piperazine Water are sold in a way which may lead to their indiscriminate and ill-advised use by the public. With the exception of Wagner's Piperazine Water, the names of these preparations do not indicate the character of the potent ingredients. While the use of complex mixtures, such as those represented by Wagner's Artificial Vichy and Wagner's Artificial Ems Kraenchen has long obtained, the further complication of the first as represented by "Wagner's Vichy Citrated" must be held irrational; also, "Wagner's Special 'C' " is held to be a needlessly complex mixture, the routine use of which is unscientific. (Jour. A. M. A., May 23, 1925, p. 1589).

Bayer 205, or Germanin.—The discovery of Bayer-205, also called Germanin, was announced several years ago, but the composition of the compound has been kept secret by the German promoters. The French chemist, Fourneau, claims to have prepared an identical product. This is described as the symmetrical urea of sodium *m*-amino-benzoyl-*m*-amino-*p*-methylbenzoyl-i-naphthylamino-4-6-8-trisulphonate. —(Jour. A. M. A., May 23, 1925, p. 1591).

Actinotherapy.—With the demonstration of a sound scientific basis for heliotherapy as well as actinotherapy with artificially generated radiations, notably as they apply to the treatment of rickets, new hopes were placed in the efficacy of sunlight. Unfortunately, there is likely to be some disappointment. A comparison of the yearly amount of sunshine in cities in the temperate zone demonstrates that there is no close parallelism between the incidence of rickets and annual sunshine. The determining factor is the quality, not the quantity, of the sun's rays. The results of heliotherapy during the winter months have been disappointing. Physicians should be prepared, where advisable, to counsel supplementing nature's niggardly sunshine with the results of man's discoveries. It should no longer be difficult to protect children from rickets, and as antirachitic action consists in the induction of calcium assimilation and its conservation, this is a matter that concerns not only the young, but also the adult.—(Jour. A. M. A., May 30, 1925, p. 1670).

Book Announcements

New and Nonofficial Remedies, 1925, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1925. Cloth. Price, postpaid, $1.50. Pp. 461+XL. Chicago: American Medical Association, 1925.

New and Nonofficial Remedies is the publication of the Council on Pharmacy and Chemistry through which this body annually provides the American medical profession with disinterested critical information about the proprietary medicines which are offered to the profession and which the Council deems worthy of recognition. The book also contains descriptions of nonproprietary medicines which the Council considers worthy of consideration.

In addition to a statement of the actions, uses and dosage of each product, many of these are arranged in classes and these classes are introduced by a general discussion of the group; thus the silver preparations, the iodine preparations, the arsenic preparations and the biologic products are preceded by an up-to-date discussion of the group.

In addition to the description of the new drugs which were accepted during the past year, the book has been extensively revised; many of the preparations listed in the previous edition have been omitted and the statements of the properties of others have been revised to bring the descriptions in accord with present day knowledge.

A section of the book (brought up-to-date each year) gives references to proprietary articles not accepted for New and Nonofficial Remedies. This list, in conjunction with the book proper, constitutes a cumulative index of proprietary medicines which physicians may consult when some proprietary product is brought to their attention.

Physicians will find this book helpful in determining the merits of the new as well as the old remedies put on the market.

Modern Surgery. General and Operative. By JOHN CHALMERS DaCOSTA, M. D., LL.D., F. A. C. S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia, and Consultant Surgeon to Various Hospitals. Ninth Edition, Revised and Reset. Philadelphia and London. W. B. Saunders Company. 1925. Octavo of 1,527 pages with 1,200 illustrations, some in colors. Cloth. Price $10.00 net.

Collected Papers of the Mayo Clinic and the Mayo Foundation, Rochester, Minnesota, for 1924. Vol. XVI. Published May, 1925. Philadelphia and London. W. B. Saunders Company. 1925. Octavo of 1,331 pages, with 254 illustrations. Cloth. Price $13.00 net.

Pediatrics. By Various Authors. Edited by ISAAC A. ABT, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8,000 pages with 1,500 illustrations, and separate Index Volume free. Now ready—Volume VII. containing 879 pages with 70 illustrations. Philadelphia and London. W. B. Saunders Company. 1925. Cloth. Price $10.00 per volume. Sold by subscription.

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Editorial

Liver Function Tests.

Last month we used as reference MacLeod's and Howell's recent well-known text-books on physiology in order to bring before our readers some comments upon the varied functions of the liver. In this issue we present a few clippings from current literature, as found in recent publications of the *Journal of the American Medical Association*, with the purpose to further emphasize to Virginia physicians the widespread interest that this subject has awakened in medical thought in recent months, as well as to point out the difficulties to be encountered in attempting to determine the functioning powers of an organ of such varied physiologic action. Perplexing questions present themselves. Can the levulose test be a liver function test of anything but the glycogen function? Can the dye test determine the glycogenic, the urea, the fat, the excretory bile function? Can urobilin and urobilinogen tests give any real meaning of liver function as related to its glycogenic, urea, or fat function? Is it possible to find one test that will give an estimate of the liver's functions?

After all we must await more complete and satisfactory development of the work on the liver function tests. The question of determining whether or not the liver is meeting the requirements of its glycogenic function, its urea function, its fat function, its bile formation and excretory function, in the early or late phases of misfunction, can hardly be near realization. To clinicians the signs of physical diagnosis afford a clue to liver dysfunction. When there is diffuse or unsymmetrical enlargement of the liver, when there is evidence of hypo- and hypertrophic change of the liver, when there is evidence of icterus or jaundice following obstruction of the outflow of bile into the duodenum, the functions of the liver may be called in question.

Likewise the subjective symptoms of that much ill-used word, "biliousness," may have more scientific meaning in this connection than medical thought has as yet properly given them. Speaking in general and with a sense of great difference for the clinical understanding of our forefathers in medicine, we may yet be compelled to say that their frequent use of calomel and blue mass, which rid the body of putrid and noxious material and brought relief from symptoms of dizziness, vertigo, nausea and ,'bilious headache," and quickly restored mental and physical feeling of well-being, was a canny understaanding of liver misfunction. In the South, in the old days, when the land was abounding in food and drink, to which our forefathers resorted with little restraint and when malarial infection with its "chill days," in certain sections of this country was widespread, the use of calomel, blue mass, podophyllin and aloes was employed to afford relief from symptoms of biliousness (liver dysfunction). So, upon these diagnosis signs of liver dysfunction, the practitioners of early days depended as indicated by the therapeutic use of drugs which apparently brought at least temporary relief to their patients.

We may read with interest the observations included in the following abstract on Levulose Liver Function Test:

In the *Journal of Laboratory and Clinical Medicine*, 10, 517-602, Apriil, 1925, abstracted in the *Journal of the American Medical Association*, June 20, 1925, it is seen that Finkelstein and Dannenberg performed the levulose test, in liver function testing, on thirty-eight consecutive patients; twenty-six were tested by the Benedict and twelve by the Epstein method. There was no increase in blood sugar in nineteen patients, representing observations in fourteen different diseases. The second nineteen patients, covering twelve diseases, showed increased blood sugar for a period of two hours. The levulose test proved positive in acute and chronic gall-bladder infections

(five cases); in icterus, in carcinoma of pancreas, and in chronic passive congestion of the liver (four cases). The test was also positive in a few other conditions in which there was no clinical evidence of hepatic injury. One really notes the unreliability of this test, but, at the same time, its possible usefulness in connection with the general study of the subject. The levulose and galactose test of liver function and the study of blood sugar in liver disease present a very interesting subject for speculation and investigation; likewise the use of the dye test of liver function, as illustrated.

In the phenoltetrachlorphthalein liver function test which has recently been employed by Maurer and Gatewood (*Journal of the American Medical Association*, Vol. 84, No. 13, page 935), one observes some interesting phases of the subject. This dye, injected intravenously in doses of 5 mg. per kilogram of body weight, was used by Rowntree *et al* as an index of liver function as it was chiefly excreted in the bile and recoverable in the feces in forty-eight hours. The difficulties of this method caused others to attempt to study the appearance of the dye in duodenal content. Rosenthal studied its retention in blood as a test of liver elimination. After an interesting recital of various methods, sidelights upon scientific procedure, and personal experience, these authors summarize by saying that the rate at which the dye is removed from the blood stream, while showing certain definite changes in advanced liver disease, is apparently not a true index of impairment of liver function.

Another angle of liver activity is found in the paper on "Bile Suppression as Result of Impairment of Liver Function," *Journal of Experimental Medicine*, 61, 587-690, May 1, 1925, abstracted in the *Journal of the American Medical Association*, Vol. 84, No. 25, page 1959. Drury and Rous present evidence to show that even when one is supposedly dealing only with mechanical obstruction, a superimposed functional biliary disturbance may exist. The impermeability of liver parenchyma to sodium indigotate from blood is taken as an evidence of functional impairment.

Readers interested in this discussion may find a good summary of the papers of a symposium on "Disturbances of Liver Function" read before the Association of American Physicians, Washington, D. C., as reported in the *Journal of the American Medical Association*, June 6, 1925. page 1774. Dr. Rowntree's remarks, in summarizing the subject are well worth reading:

"There is much still to be learned concerning the diagnosis of disease of the liver. Liver function tests are of great help, but there are others which should never be lost sight of. The coagulation time is of extreme importance, particularly in relation to surgery. The fragility test gives valuable information from the standpoint of differential diagnosis. Roentgen-ray studies, with the recent introduction of dyes in this connection, add another important laboratory link to the chain of examinations that can be made in diagnosing disease of the liver. The approach to the study of liver function is difficult. The proposed tests must be studied in a large series of cases, and the peculiar value and significance of each test be determined. My studies include more than a thousand determinations of the phenoltetrachlorphthalein retention, and an investigation of other tests of liver function, such as the Van Den Bergh test and the levulose and fructose tests. The two tests which I have decided are of real value are the dye retention, and the level of the serum bilirubin. I do not believe that any of the tests have been of clinical value, except the tests of excretory function. The test of metabolism has not proved of value in clinical practice. When jaundice is present, these tests are of importance in diagnosis from a quantitative point of view, but they lack in information, because the yellow of the patient is just as good as the red of the test. They are of value in latent jaundice. Their greatest value will lie in cases without jaundice, and in such cases the phenoltetrachlorphthalein test is the most useful. They serve to control the results of treatment and to follow the course of the disease. These tests with the blood chemical tests indicate the occurrence of toxemias. The coagulation time has been of extreme importance, particularly when the clotting time is preoperatively controlled by the use of calcium. I believe from our studies that these tests are already of practical value in the clinic and in medicine, but the field of their value is strictly limited."

Pancreatic Secretion.

Silverman and Denis[1] call attention to physiologic response of pancreatic secretion to

1. Silverman and Denis.—Archives of Internal Medicine, Chicago, March 15, 1925, page 357. Abstracted in the Journal of the American Medical Association, May 16, 1925, page 1520.

different foods. The effect of 400 c.c. of milk, taken in two equal parts, at an half hour interval, is to stimulate protease and lipase. The ingestion of cream (fat) in 200 c.c. amounts, half an hour apart, in two feedings, produced a very distinct stimulation of amylase and protease in twenty-six minutes after receiving the first. The feeding of the whites of eight eggs and one yolk, boiled for two minutes, produced the striking result of a maximum output of all three of the pancreatic enzymes. In one hour and seventeen minutes amylase and protease enzymes doubled their concentrations and lipase rose from 0 c.c. to 1.5 c.c. Feeding of arrow root biscuits did not produce any stimulation of amylase, but a little of protease.

Howell,[2] representing modern physiologists, may be cited in further comment upon this important organ of digestion. Pancreatic secretion is a water-clear secretion, amounting to from 500 to 800 c.c. a day. It possesses three enzymes, trypsin (proteolytic), amylase (pancreatic diastase), and lipase (lipolytic). The rate of flow of pancreatic juice is dependent to a marked degree upon the nature of the food. This author's observations tend to show that maximum flow is reached sooner after a meal of bread than after a meal of meat.

How the enzyme concentration of the juice is stimulated by different foods is not understood, but it is considered probable that the composition or adaptation of the secretion varies somewhat with the character of the food.

News Notes

Finals of University of Virginia, Department of Medicine.

The Medical Department of the University of Virginia, as is its custom, held its final exercises in connection with those of the other departments of the University, June 14-16. Bishop James E. Freeman, of Washington, delivered the annual sermon to the graduates in Cabell Hall, on June 14, and that evening, there was an organ recital by Harry Rogers Pratt in the McIntire amphitheater.

Monday, the 15th, was alumni day, and a large number of former students were present for this occasion. Drs. Hugh Young, of Baltimore, and Hugh T. Nelson, of Charlottesville, were among those elected members of the Board of Managers of the Alumni Association. Judge Nathan L. Bachman, of Chattanooga, Tenn., former justice of the Supreme Court of Tennessee, was speaker at the alumni and class luncheon at the Commons, that day. That afternoon, President and Mrs. Alderman gave their usual reception at their home in honor of the graduates. The alumni ball was held that evening, beginning at 10 P. M.

Class exercises were held at 11 A. M. on Tuesday the 16th, and graduating exercises in the afternoon of the same day, A. D. Barksdale, of Lynchburg, delivering the address to the graduates. Of the thirty-two students and six alumni elected to membership in the Phi Beta Kappa, national scholastic honor society, James S. Bradsher, Jr., John Staige Davis, Jr., Elizabeth H. Edmunds, Henry W. Patton, and Wiley J. Rollins, Jr., were from the medical department and Dr. James C. Bardin, University, and Dr. John W. Burke, II, of Washington, D. C., from the alumni. The final ball in the gymnasium that evening closed the festivities for the class of 1925.

The list of graduates in the Medical Department, with hospital appointments, is as follows:

University of Virginia Hospital, University—Drs. Edward N. Booker, Clayton, N. C.; Lemuel R. Broome, Kinston, N. C.; Richard C. Eley, Suffolk; John B. Faison, Manasquan, N. J.; Robert E. Feagans, Holcombs Rock; Joseph C. Inman, Jr., Greensboro, Fla.; Eldred S. Jones, Hampton; Warren W. Koontz, Roanoke; and Wiley J. Rollins, Jr., Darlington, S. C.

St. Joseph's Hospital, Baltimore, Md.—Dr. Sheppard K. Ames, Belle Haven.

Maryland General Hospital, Baltimore, Md.—Dr. Frederick T. Amiss, Luray.

Protestant Hospital, Norfolk, Va.—Drs. Mallory S. Andrews, Norfolk; Frederick P. Barrow, II. Portsmouth, and Porter B. Echols, Glasgow.

Massachusetts General Hospital, Boston, Mass.—Dr. Staige D. Blackford, University, Va.

Fifth Avenue Hospital, New York, N. Y.—Drs. Herman Boughton, Mangham, La., and Charles P. Cake, Norfolk.

St. Vincent's Hospital, Norfolk, Va.—Dr. James S. Bradsher, Jr., Oxford, N. C.

2. Howell.—Textbook on Physiology. Ninth edition, page 792.

Macon General Hospital, Macon, Ga.—Dr. Glynne Brown, Potts Camp, Miss.

U. S. Public Health Service—Drs. Kirby K. Bryant, Sanford, Miss.; Haswell D. Franklin, Hillsville; Clarence N. McPeak, University, Va., and William H. Sebrell, Jr., Portsmouth.

State University Hospital, Philadelphia, Pa.—Dr. Walter H. Calhoun, III, Erica.

Hebrew Hospital, Baltimore, Md.—Dr. Joseph Caplan, Norfolk.

Orange Memorial Hospital, Orange, N. J.—Dr. Thomas H. Clarke, Jr., Sumter, S. C.

Virginia Mason Hospital, Seattle, Wash.—Drs. Julian H. Coleman, Penola, and Andrew S. Graham, Columbia, S. C.

St. Luke's Hospital, New York, N. Y.—Drs. John Staige Davis, Jr., University, Va., and James W. Jervey, Jr., Greenville, S. C.

Memorial Hospital, Worcester, Mass. — Dr. Elizabeth Edmunds, Halifax.

Post-Graduate Hospital, New York, N. Y.—Dr. Charles H. Evans and George D. McGregor, both of Lynchburg.

Chestnut Hill Hospital, Philadelphia, Pa.—Drs. John E. K. Flannagan, Richmond, and Frank P. Hunter, Warrenton, N. C.

Church Home and Infirmary, Baltimore, Md.—Dr. Jospeh C. Hiden, Pungoteague.

Stuart Circle Hospital, Richmond, Va.—Dr. Richard H. Holt, Bingham Canyon, Utah.

University of Pennsylvania Hospital, Philadelphia, Pa.—Dr. Stanton K. Livingston, University, Va.

Gallinger Municipal Hospital, Washington, D. C.—Dr. Adah Anita Lotti, Charlottesville.

Metropolitan Hospital, New York, N. Y.—Dr. Ruth S. Mason, Stony Creek.

U. S. Naval Hospital, Norfolk, Va.—Drs. Ocie B. Morrison, Jr., Petersburg; Henry W. Patton, Jonesboro, Tenn., and Marion T. Rosser, Onancock.

Tenn. C. & I. Employees' Hospital, Birmingham, Ala.—Dr. Martin G. Neely, Anderson, S. C., and Frank W. Riggs, Greenville, Miss.

Worcester City Hospital, Worcester, Mass.—Dr. William A. Runkle, Charlottesville.

St. Elizabeth's Hospital, Richmond, Va.—Drs. Roy W. Upchurch, Oxford, N. C., and Harry J. Warthen, Jr., Richmond.

Virginia State Board of Health—Dr. Goldsborough F. McGinnis, Merry Point.

Resident Roentgenologist, University of Virginia Hospital, University, Va.—Dr. Edgar M. McPeak, University, Va.

Instructor in Pathology, University of Virginia—Dr. Roy A. Gregory, Tupelo, Miss.

Instructor in Anatomy, University of Virginia—Dr. Albert M. Smith, Richmond.

Richmond Meeting of Medical Society of Virginia.

Special committees appointed by the Richmond Academy of Medicine to prepare for the meeting of the State Society, October 13-16, are planning an interesting and pleasant time for those who attend. A large attendance is expected and all members of the Society are urged to attend and bring members of their families. Social features will be prepared for the men and ladies accompanying them, and, with the guests named in our June issue and the material to be furnished by our members, the scientific program should be a good one. Make arrangements to save part of your vacation time for this meeting and make hotel reservations in advance.

At the last meeting in Roanoke, the Roanoke Academy of Medicine donated a cup for the golf tournament. This cup is to be held permanently by the member of the Society who wins it at three consecutive meetings. It was won in Roanoke by Dr. Fred Hodges, of Richmond, and in Staunton, by Dr. Thomas W. Murrell, of Richmond. All golfers should enter for this tournament.

Cards will be sent out early in August, as is the custom of the Society, requesting titles of papers for the meeting. In accordance with resolution adopted by the Program Committee, the Secretary-Treasurer of the Society may not receive titles for the program prior to two months before the date of the annual meeting, the plan being to give all members an equal chance to submit titles, as the program is to be limited to fifty papers. This year, the first day on which the Secretary-Treasurer may receive titles will be August 13th. It is therefore requested that members time the sending of their titles so that they may reach the Society's offices, 104½ West Grace Street, Richmond, on or as soon as possible, after that date. By limiting the number of papers, the Society will meet in only one section. The resolution is as follows:

"1. No title shall be accepted for the program prior to two months before the date of the annual

meeting. As provided in the By-Laws, an announcement concerning the annual meeting and request for titles of papers shall be mailed by the Secretary-Treasurer to all members of the Society.

"2. On and after the day which would be two months prior to the first day of the annual meeting, titles will be received until fifty are in hand. In the fifty titles referred to, provision shall be made for the papers of the invited guests and papers on the subject of general discussion.

"3. After the fifty titles are received, the Program Committee shall arrange and classify them according to related subjects."

Scientific Exhibit for the Next Meeting of the Medical Society of Virginia.

An effort is being made to have an attractive scientific exhibit at the meeting of the Medical Society of Virginia this fall. The committee consists of Dr. J. Shelton Horsley, chairman, Dr. Charles Phillips, of the Medical College of Virginia, and Dr. J. S. Horsley, Jr. The chairman of the committee is particularly desirous of receiving applications for exhibits at as early a date as possible so that the proper space can be assigned. It is hoped that the two medical colleges in Virginia will contribute an extensive exhibit, particularly along educational lines. The hospitals in Virginia should also furnish exhibits. The Committee on Scientific Exhibits wishes to have exhibits from individual doctors or groups of doctors who are working along any special lines.

The committee earnestly requests that the medical schools, hospitals or individuals who expect to participate in the Scientific Exhibit will communicate with the chairman of this committee as soon as possible.

N. C. State Health Officers' Association.

At the annual meeting of this Association in Pinehurst, the following officers were elected: President, Dr. S. E. Buchanan, Concord; vice-president, Dr. Lester L. Williams, Mt. Airy; and secretary-treasurer, Dr. Frank M. Register, Raleigh.

Dr. J. Minor Holloway,

Of Port Royal, Va., who recently completed a course in otolaryngology at the University of Pennsylvania, has gone to Washington, D. C., where he will take charge of the practice of Dr. G. Bache Gill, at 1624 Eye Street, Northwest, while Dr. Gill is taking a post-graduate course at Vienna, Austria.

Dr. Bernard H. Kyle

Has been elected one of the vice-presidents of the Lynchburg (Va.) Lions Club.

Chile Enacts Social Hygiene Law.

By a single stroke of legislative action the Republic of Chile has recently joined the ranks of the nations giving special and continued attention to the control of venereal diseases. The law establishes the Division of Social Hygiene which naturally differs from the Division of Venereal Diseases of the United States Public Health Service by having police power for the enforcement of preventive measures.

The Chilean Division of Social Hygiene has for its function the dissemination of information concerning venereal diseases, the creation of social hygiene professorships in colleges and universities, and the suggestion of types of elementary school instruction in social hygiene. The Division is further vested with the power to control and repress prostitution. Any woman prostitute declared to have a venereal disease is to be confined to a hospital during the period of contagion. Those refusing treatment are to be sent to a reformatory. Provision is also made for injunction and abatement measures making it possible to close up as a nuisance any building which the owner permits to be used for purposes of prostitution. Advertisements relating to patent medicines for the cure of venereal diseases are not to be accepted for publication in newspapers and magazines, unless endorsed by the Division of Social Hygiene. A medical certificate of good health is required from both men and women before marriage.

Dr. G. B. Gilmore,

Of Norfolk, Va., is spending some time in New York City, where he is taking post-graduate work in diseases of the ear, nose and throat.

The Medical Veterans of the World War

Held a most successful dinner-meeting during the recent meeting of the American Medical Association in Atlantic City. This was attended by about five hundred and interesting reminiscences were given by a number. This banquet was so successful that it was decided to perfect State organizations to meet with the State Societies for similar social purposes and to preserve the spirit of service with which 35,000 physicians entered the World War. Dr. Hubert Work was elected president for the coming year.

Several Richmond Doctors Honored.

Dr. Douglas VanderHoof was elected a member of the Association of American Physicians,

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at its meeting recently held in Washington, D. C.

Dr. Emory Hill was elected secretary of the American Ophthalmological Society at its annual meeting in May.

Dr. M. Pierce Rucker was elected a member of the American Gynecological Society at its meeting in Washington, D. C., in May.

The West Virginia State Medical Association, At its annual meeting in Bluefield, early in June, elected the following officers for the ensuing year: President, Dr. James R. Bloss, Huntington; vice-presidents, Drs. Richard O. Rogers, Bluefield; Dr. Henry C. Skaggs, Montgomery; and D. A. MacGregor, Wheeling; treasurer, Dr. Hugh G. Nicholson, Charleston; executive secretary, Mr. Sterrett O. Neale, Charleston. Dr. Bloss, who has been editor of the *West Virginia Medical Journal*, will assume his duties as president on January 1. The journal will then be edited by a committee composed of Drs. James H. Anderson, Marystown; Walter E. Vest, Huntington; Harry M. Hall, Wheeling; Charles A. Ray, Charleston; and Charles W. Waddell, Fairmont.

Early Vacationists.

Dr. I. K. Briggs has returned to his home in South Boston, Va., after a motor trip to Canada and many points of interest in the north, including Atlantic City.

Dr. and Mrs. Paul Redd and daughter, of Richmond, returned home the first of this month, after a visit to Boston and Newton Center, Mass., and to New York City.

Dr. and Mrs. B. Ryland Hudnall and children, of Covington, Va., left about the middle of June for a motor trip to Richmond and later to Reedville, Va.

Dr. and Mrs. B. B. Bagby and children, of Richmond, left the latter part of June on a motor trip to Sheffield, Mass., where they expect to spend several weeks visiting relatives.

Dr. and Mrs. James L. Early, of Saltville, Va., were recent visitors in Pulaski, Va.

Dr. and Mrs. J. Allison Hodges, Richmond, left the first of July for their summer home, "Drowsy Waters," near Montreat, N. C. They will remain there for the rest of the summer.

Dr. and Mrs. Charles E. Conrad and children have returned to their home in Harrisonburg, Va., after spending sometime in Atlantic City, N. J.

Dr. Joseph A. White and Dr. and Mrs. Emory Hill, of Richmond, sailed from New York, on June 27, for England. Drs. White and Hill expected to attend a convention in London, early in July, and later to spend some time travelling in Europe.

Dr. and Mrs. W. Lowndes Peple and daughter, of Richmond, left the first of July for New Hampshire, where they have taken a cottage for the summer. Dr. Peple expected to return to the city after a few weeks.

Dr. Robert T. Glassell returned to his home at Bowling Green, Va., the latter part of June, after a visit to his daughter in Norfolk, Va.

Dr. and Mrs. Paul W. Howle and family, and Dr. and Mrs. Beverley R. Tucker and family, of Richmond, have taken cottages at Mountain Lake, Va., for the summer season. Both Drs. Howle and Tucker plan to spend several weeks with their families at this resort.

Dr. and Mrs. Grant Preston and small son, of Harrisonburg, Va., are home again, after a visit to Mrs. Preston's parents at Front Royal, Va.

Dr. and Mrs. R. C. Fravel and son, of Richmond, have been spending some time with relative at Woodstock, Va.

Dr. Robert M. Glass and daughter, Miss Colleen Glass, of Winchester, Va., sailed from New York, July 4, for a visit to European countries. They will also visit Jerusalem and the Holy Land before returning home in the early Fall.

Dr. and Mrs. Howard Armstrong and sons have returned to their home in Harrisonburg, Va., after a visit to Washington, D. C.

Dr. and Mrs. R. F. Thornhill, Pulaski, Va., are enjoying a visit with friends in Orange, Va.

Dr. and Mrs. J. Thomson Booth returned to their home in Ashland, Va., the first of the month, after a visit of several weeks to California.

Dr. Samuel Downing and family, of Newport News, Va., have been on a visit to Dr. Downing's parents in Lancaster, Va.

Dr. and Mrs. Armistead L. Wellford returned to their home in Richmond, the latter part of June after a motor trip to Mountain Lake and Pulaski, Va.

Dr. W. S. Hodnett, Richmond, is home again after a visit of several weeks to the Pacific coast. While away, Dr. Hodnett visited a number of points of interest in the west.

Dr. and Mrs. W. Armistead Gills, Rich-

mond, left the middle of June for a visit of several weeks to Atlantic City. Later, they will go to Tate Springs, Tenn.

Honor to Late Dr. Bahnson.

At commencement exercises of the Salem Woman's College, at Winston-Salem, N. C., the Bahnson Memorial Infirmary was presented the College, as a memorial to Dr. Henry T. Bahnson, of that city, who died in 1917. Dr. Bahnson was one of the most prominent doctors of the "Old North State" and was for many years physician to the College.

The Lewis-Gale Hospital Training School for Nurses

Held its commencement exercises on the evening of June 12th, at Hotel Roanoke, Roanoke, Va. At this time six young women were presented diplomas.

Dr. S. C. Draper,

Who has been for sometime at Bluefield, W. Va., has returned to Pulaski, Va., where he is now engaged in general practice.

Dr. Cora Z. Corpening

Has resigned from the staff of Lakeview Hospital, Suffolk, Va., effective July 1. She has gone to Virginia Beach, Va., where, after a few weeks' rest, she will resume private practice.

The Galax Hospital and Clinic

Has recently been opened at Galax, Va., with the following doctors on its staff: Dr. J. K. Caldwell, internal medicine; Dr. A. L. Jones, surgery and operative gynecology; Dr. Z. G. Phipps, obstetrics, diseases of women and children and medical gynecology; Dr. John C. Phipps, diseases of the eye, ear, nose and throat; Dr. W. P. Davis, X-ray; and Dr. R. S. Kyle, microscopic and laboratory.

Dr. J. H. Crouch,

Health officer for Williamsburg and James City County, Virginia, returned early in June from Johns Hopkins University, where he had been taking a post-graduate course in public health work. On his return to Williamsburg, Dr. Crouch stopped in Richmond for a short visit to relatives.

Hampden-Sidney Alumni Organize.

Lynchburg, Va., Hampden-Sidney College alumni, organized an association in June, and elected Dr. James Morrison president, and Dr. J. Paulett Clark vice-president.

Dr. Ramon D. Garcin,

Richmond, after an illness of several months at Hygeia Hospital, this city, returned home about the middle of June. He is now much improved and will take a short vacation before resuming work. He wishes, through these columns, to thank his many friends for their kindnesses to him during his illness.

Dr. Calvin H. Childress,

Norfolk, Va., was a member of the medical corps with the Virginia Naval Reserves on the U. S. S. Eagle 9, on its trip in June, when that boat was disabled by storms and was much delayed in reaching port.

Dr. and Mrs. T. W. Edmunds,

After spending about six months in Vienna, Austria, have returned to their home in Danville, Va. While in Vienna, Dr. Edmunds spent most of his time in taking post-graduate work in diseases of the eye, ear, nose and throat.

Dr. Henry's Home Struck by Lightning.

During an electrical storm on June 18, the home of Dr. Hugh C. Henry, of Central State Hospital, Petersburg, Va., was struck by lightning and damaged to the extent of about $500. Members of Dr. Henry's family were uninjured.

More Play, Less Delinquency.

Thirty-eight out of every 100 children brought before juvenile-court officials in Omaha live one-half mile or more from the nearest playground, according to a study by Professor T. E. Sullenger of the University of Omaha.

Omaha's juvenile delinquency rate for 1922-23 was 3.1 per cent compared with 1920 rates of 3.8 for Washington, D. C., 2.4 for Boston, and 1.2 for Buffalo, it is pointed out. Remedies for juvenile delinquency urged by Professor Sullenger are more playgrounds, enforcement of pool room laws, censorship of motion pictures, fewer boys in street trades, more Boy Scouts, better enforcement of school laws.

The Medical Association of the Valley of Virginia

Held its semi-annual meeting at Clifton Dale Country Club, Clifton Forge, Va., June 4, Dr. D. M. Kipps, of Front Royal, presiding. The attendance was good and interesting papers were presented. Between the morning and afternoon sessions, luncheon was given the

visitors at the club house. Dr. Alexander Robertson, Jr., Staunton, is secretary of this association. Several new members were admitted. It was decided to hold the next meeting in Winchester, September 24.

Dr. T. Allen Kirk,

Of Roanoke, Va., has been elected president of the Hampden-Sidney College Alumni Association, which completed its organization in June.

Shrine Hospital for Richmond.

It is announced that Richmond, Va., was chosen as one of the cities for a $1,000,000 hospital for crippled children by the Imperial Shrine Council, at its meeting in Los Angeles, California, in June. The initial structure to be erected will cost about $150,000, and it is planned to expand the institution to the $1,000,000 plant by degrees. This is to be one of a number of similar institutions being erected by Shriners throughout this country. The site is to be selected by a committee to be appointed by the Imperial Shrine Council.

The Inter-State Post-Graduate Assembly of America

Will be held at St. Paul, Minnesota, October 12-16, 1925. A number of the country's most prominent physicians and specialists have signified their acceptance of invitations to appear on the scientific program. Dr. William B. Peck, Freeport, Ill., is managing director, and Dr. Edwin Henes, Jr., 445 Milwaukee Street, Milwaukee, Wis., is secretary and director of exhibits.

Dr. Clifford A. Folkes,

Of Richmond, who was operated upon for appendicitis, early this month, was reported as doing well as we went to press.

Denmark Reduces Venereal Disease.

According to a recent report by Dr. F. T. H. Wood of the Health Section of the League of Nations Secretariat, syphilis has been reduced in Copenhagen, Denmark, from 8.8 per 10.000 in 1910 to 4.6 in 1922. The rate of infection with gonorrhea also shows a considerable decline.

It is of interest in this connection that Denmark was the first country to introduce legislation dealing with the control of venereal diseases. As early as 1788 the plan of free treatment and compulsory medical care of venereally infected invididuals was adopted. Since then the effectiveness of the eradication of syphilis and gonorrhea has been strengthened by limiting medical practice to qualified persons, prohibiting patent medicine advertisements, providing clinical and hospital facilities, and establishing the "State Serum Institute," which has for its main functions the laboratory diagnosis of syphilis and the maintenance of a card index of persons so infected.

Urgent Need of Conserving the Sight of School Children.

A recent news note received from the National Committee for the Prevention of Blindness, 130 East 22nd Street, New York City, calls attention to the fact that one child out of every eleven in the public schools of American cities and one child out of every seven in the schools of rural districts in the United States have such seriously defective vision as to be handicapped in their school work. Conservation of the eye-sight of school children is fundamentally a duty of the school system. As a first step toward the fulfillment of this duty, a uniform law for the examination of the eyes of school children should be adopted by all cities and states.

During one year, when a study was being made, it was found approximately 5,000,000 school children in the United States received eye examinaions and that an average of about 12 per cent of these children were found to have defective vision. About one-eighth of the 24,000,000 school children in the country have faulty eye-sight. Investigators found that rural districts generally report a larger per cent of defective vision than city districts. One state showed 16.8 per cent of defective vision among 500,000 pupils examined in the rural districts, while the cities of that state showed only 8.5 per cent among 370,000 pupils examined. Another state reports 14.4 per cent defectives in rural districts and cities in the same state 6.3 per cent. It seems likely that this difference is due to such differing factors as conditions under which the tests were made, bad illumination in rural schools and homes, and the small number of corrections of visual defects provided for rural children.

Discussing existing legislation on the subject, the report reveals that in only seventeen states is the examination of the eyes of school children compulsory and that in fourteen other states it is merely permissive. Of the seventeen

states requiring eye examinations very few specify the portion of school population to be examined or the frequency with which such examinations should be made. About the period of adolescence, twelve to fifteen years, the condition of the eyes is likely to be changing, so that through the whole period of six to fifteen the average child's eyes and vision undergo a slight, though certain, change. This emphasizes the need of frequent tests during this period.

Dr. John M. Manning,

Durham, N. C., was recently elected mayor of that place for his third term.

Member S. C. State Board of Health.

Dr. Davis Furman, of Greenville, S. C., has been appointed a member of the South Carolina State Board of Health to succeed the late Dr. C. C. Gambrell.

Dr. Allen H. Moore,

Formerly of New Market, Va., a member of the Medical Society of Virginia and for four years a member of the local Board of Health for Shenandoah county has moved to Doylestown, Pa., where he will continue his professional work. Dr. Moore is an alumnus of Jefferson Medical College, Philadelphia.

Dr. F. A. Sinclair,

Of Newport News, Va., was elected surgeon of the Veterans of Foreign Wars, at the second annual encampment of the State department, held in Newport News, Va., in June.

Resigns as Dean of Emory University School of Medicine.

Dr. William S. Elkin, for seventeen years dean of the Emory University School of Medicine, Atlanta, Ga., recently tendered his resignation and was elected emeritus dean and emeritus professor of obstetrics and gynecology. Dr. Elkin has been connected with this school, now known as the School of Medicine of Emory University, for forty-three years.

Dr. Russell H. Oppenheimer, an alumnus of the University of Michigan Medical School, has been elected to succeed Dr. Elkin as dean.

Superintendent of Fredericksburg Hospital.

Miss Sue Davidson, formerly of Alexandria, Va., was appointed superintendent of the Mary Washington Hospital, Fredericksburg, Va., and entered upon her duties there June 15.

The American Society of Clinical Pathologists,

At its annual meeting in Philadelphia, recently, elected Dr. Frederick E. Sondern, New York, president, Dr. William G. Exton, Newark, N. J., president-elect, and re-elected Dr. Ward T. Burdick, Denver, Col., secretary-treasurer.

Married.

Dr. John Shelton Horsley, Jr., and Miss Lillian Waller Holladay, both of Richmond, June 24.

Dr. Percy Everett Schools and Miss Evelyn Mallory, both of Richmond, June 3.

Dr. Ezra Eugene Neff, of Madison, Wis., and Miss Ruth Perry, of Beverly, Mass., June 2. Dr. Neff was formerly from Chilhowie, Va., and graduated in medicine from the University of Virginia in 1916.

Dr. Henry A. Hornthal,

Formerly of Norfolk, Va., who graduated from Medical College of Virginia, last year, left the first of this month for White Sulphur Springs, W. Va., where he will spend sometime before going to Washington to make his home. Dr. Hornthal has just completed a year's internship at St. Luke's Hospital, Richmond.

Zinc Stearate Dusting Powders for Infants.

The second report of the Committee on Accidents from Zinc Stearate Dusting Powders appointed by the Board of Trustees of the American Medical Association has recently been published. Copies of this report, with an appendix showing the opinions of thirty-four representative pediatricians on the therapeutic value of such powders, can be obtained on request. Address, Committee on Zinc Stearate Dusting Powders, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, enclosing a self-addressed, stamped envelope.

There were reported to the Committee 131 accidents from the inspiration of zinc stearate dusting powders by infants. Twenty-eight of the victims died. The Committee conferred with representatives of certain distributors concerning the dangers incident to the use of such powders on infants. Following a meeting held at the headquarters of the American Medical Association, these distributors agreed to co-operate by adopting self-closing containers for the powders they distribute and agreed

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that cautionary labels are desirable. Opinions were secured from thirty-four representative pediatricians concerning the therapeutic value of zinc stearate dusting powders. Thirty-one believe that such powders have no advantage over other dusting powders, that they constitute a hazard to infant life, and that their use should be discouraged.

International Health Board uses Laboratory of State Board of Health as Training School for Fellowships.

Dr. Luang Vaidaya Vidhiker, of Bangkok, Siam, has been assigned by the International Health Board to a term of service with the laboratory of the Virginia State Board of Health. Dr. Vidhiker will spend the summer in Richmond and return to Johns Hopkins for additional work in the fall.

Mr. Aubrey H. Straus, director of the laboratory, who has been taking a special course leading to the degree of Doctor of Science, and has been in several classes with Dr. Vidhiker at Johns Hopkins, is now back at work in Richmond.

It is a custom of the International Health Board to assign to the Virginia State laboratory one of its students who are candidates for fellowships. Last year, Oscar Vargas, of Costa Rica spent the summer in Richmond, and he is now establishing a government laboratory in Costa Rica. Dr. Vidhiker will, of course, return to his county when his studies are completed.

Noted Chemists Named to Help Map Program for Benefit of Chemical Industry.

The appointment of an advisory committee composed of outstanding members of the chemical industry to co-operate with the Department of Commerce has been announced by Secretary Hoover. The purpose of this committee is to assist the chemical division of the department in mapping out a program of work which will be of the most practical and immediate benefit to the industry.

The membership of the committee includes Dr. Leo Bakeland, president American Chemical Society; Dr. A. S. Burdick, president of the Abbott Laboratories of Chicago, and formerly president of the American Drug Manufacturers' Association: Dr. H. E. Howe, editor of the *Journal of Industrial and Engineering Chemistry;* Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association; Henry Howard, chairman of the board of governors af the Manufacturing Chemists' Association; C. Ober, president of C. Ober & Sons, Baltimore, and past president of the National Fertilizer Association; E. C. Trigg, president of John Lucas & Co., Philadelphia, and president of the Agricultural Insecticide and Fungicide Association; A. Cressy Morrison, president of the Acetylene Gas Manufacturers' Association, and S. W. Wilder, secretary of the Manufacturing Chemists's Association.

Dr. and Mrs. Walton S. Shepherd

And their youngest son, of Charleston, W. Va., sailed for Europe, the latter part of June. Dr. Shepherd will attend eye, ear, nose and throat clinics in Vienna, during the summer, while Mrs. Shepherd and their son will tour the continent. Dr. Shepherd has many friends in this State, being an alumnus of the Medical College of Virginia.

Fellowships in Neuropsychiatry at University of Pennsylvania, Graduate School of Medicine.

Five fellowships in neuropsychiatry are available in the Graduate School of Medicine of the University of Pennsylvania. These fellowships have been established for the period of three years from October 12, 1925 by the Commonwealth Fund of New York.

No definite fellowship stipend has been fixed; but it will in each case approximate $2,200 per annum. The precise stipend will in each case be designated by the fellowship committee.

The minimal qualifications for applicants are: (a) age, from 25 years to 35 years inclusive; (b) graduate of a Class A medical school; (c) one year's approved internship; (d) satisfactory references; (e) approval of personal and professional status. Each fellowship is upon the basis of three years' (36 months) work—one year fundamental, one year practical, one year investigative.

Applications are invited for these fellowships and should be addressed to "Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia."

The John Horsley Memorial Prize, University of Virginia.

This prize was established in February, 1925, by Dr. J. Shelton Horsley, of Richmond, Virginia, an alumnus of the University of

Virginia, as a memorial to his father, Mr. John Horsley, of Nelson County, Virginia.

The prize consists of two years' interest on $10,000 in 5 per cent bonds and will therefore be presumptively $1,000. It is to be awarded every two years by a committee of the Medical Faculty of the University of Virginia for a thesis upon some subject in general surgery. The term "general surgery" is used in a broad way and includes the specialties commonly associated with general surgery such as orthopedic surgery, urology and gynecology but not the specialties of the surgery of the eye, ear, nose and throat which have developed along lines which differentiate them markedly from general surgery. If no essay is considered worthy the prize shall not be awarded and the accumulated interest will be added to the principal.

The object of the prize is to stimulate an interest in the scientific aspects of surgery. In the past there has been some tendency to glorify the mechanical technic of surgery, and perhaps some neglect of its underlying scientific features. The donor wishes particularly to stimulate an interest in the underlying biologic principles with the hope that surgeons may not become mere operators but be imbued with a scientific spirit which will contribute to the advancement of surgical knowledge. With this in view the essay should be on a surgical problem, the solution of which depends solely or in large part upon research work, (preferably original research) in same branch of pathology. bacteriology, physiology, biochemistry or embryology.

All graduates of the Medical Department of the University of Virginia of not more than fifteen years standing are eligible for this prize and are invited to submit theses. In the discretion of the committee the prize may be awarded for work done by a medical graduate of the University of Virginia in collaboration with a non-alumnus of this institution but in such case the award will be given to the Virginia graduate alone.

The theses must be submitted to the committee in typewritten form and work that has not been previously published will be preferred. If the work has been previously published it must be presented in a new form. The committee will make suitable arrangements for the publication of the theses.

All theses entered in this competition must be in the hands of the committee on February 1st, of the year in which the prize is to be awarded. They should be addressed to the Dean of the Medical School of the University of Virginia. The prize is to be awarded for the first time in June, 1927, therefore the theses should be presented not later than February 1st, of that year.

Dr. W. R. Bracey,

Who has been associated with Dr. J. R. Blair at the Hygeia Hospital, for the past four and a half years, is now devoting his entire time to his private work, with offices at 2301 West Grace Street, Richmond. Dr. Bracey limits his work to surgery.

The Norfolk County Medical Society,

At its annual meeting, June 1, elected Dr. Stanley H. Graves president; Dr. J. Warren White first vice-president; and re-elected Dr. Lockburn B. Scott secretary-treasurer. All of these officers are of Norfolk, Va.

The Southside Virginia Medical Association

Met in Suffolk, June 9, with Dr. F. C. Rinker, Norfolk, vice-president, presiding. A good number of members and visitors were present and a free discussion of the papers read was indulged in. Following the afternoon session, the Suffolk doctors tendered the visiting doctors a banquet, after which the Society adjourned to meet in Petersburg, on the second Tuesday in September, 1925. Dr. R. L. Raiford is secretary of this society.

Dr. L. T. Price,

Richmond, was among the doctors who attended the annual meeting of Sons of Confederate Veterans at Staunton, June 17-19.

Dr. W. C. Harman,

Dolphin, Va., attended the meeting of the West Virginia State Medical Association at Bluefield, June 9-12.

Dr. H. G. Plaster,

Formerly of Leesburg, Va., is now located at 1769 Columbia Road, Washington, D. C., for the practice of his profession.

Summer Camps.

With proper sanitary facilities rightly used a summer camp, be it temporary or permanent, is a health-giving proposition. Without such facilities, or with wrong use of good facilities, a camp may quickly become a menace to the health of everyone in it. It devolves largely upon the tourist himself to see that

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sanitary precautions are taken during his stay at a camping spot. The rule for your guidance should be, "leave the camp site in as good or better condition than you found it."

The most important thing to be considered in the "back to nature" movement, should be the purity of drinking water. Do not drink from any spring unless sure of the source of the water.

Guide Book for Motorists Published by Camp New York.

An attractively illustrated forty-eight page booklet entitled "Camp New York" describing the forty acre camping ground of New York City's first motor tourists' camp has been published, copies of which may be obtained by writing to the secretary, Camp New York, 191 Fulton Street, New York City.

This book also contains maps of the neighboring states with the routes of the main arteries leading to the Metropolis clearly defined. In an interesting style it briefly outlines the historical and important places which lure, daily, thousands of sightseeing tourists to The Wonder City.

Civil Service Positions Available.

The U. S. Civil Service Commission, Washington, D. C., announces the following open competitive examinations:

Physiotherapy aide, physiotherapy pupil aide, and physiotherapy assistant, receipt of applications to close July 25, August 29, September 26, October 24, and November 28, 1925;

Graduate nurse and graduate nurse (visiting duty), also for dietitian, applications for all of these positions to be rated as received until December 30, 1925.

Full information and application blanks may be received from the Commission, or the secretary of the board of U. S. civil service examiners at the post-office or customhouse in any city.

Wanted.

To buy practice in Virginia or West Virginia. Would buy office equipment or property. Reason for leaving present location; want to locate near high school. Graduate of Medical College of Virginia. References: West Virginia State Medical Association and County Medical Society. Nothing but a good proposition considered. Address answers to No. 415, care this jourial. (Adv.)

For Sale.

X-ray equipment in good condition offered at very low price account closing private hospital. Vertical and horizontal fluoroscopes (Victor) Scheidel transformer, also accessories. Adrress P. O. Box 468, Lynchburg, Va. (Adv.)

For Sale.

Medical books by best medical authors. Prices reasonable. Write for list and prices. Address No. 419, care this journal. (Adv.)

Obituary

Dr. Virginius Harrison,

A prominent physician of Richmond, died at his home in this city, June 6, after an illness of some time. Dr. Harrison was born in Richmond sixty years ago, and, upon completion of his academic education at Emory and Henry College, studied medicine at the University of Virginia, graduating in 1887. He was elected a member of the Medical Society of Virginia that same year and had continued a member since then. For some years after his graduation, Dr. Harrison did general practice, but later limited his work to obstetrics and was associate professor of this branch at the Medical College of Virginia, where he was held in high esteem by the faculty and students. He is survived by his wife, who was Miss Marie Keesee, of this city.

Dr. Oscar Littleton Powell,

One of the most prominent and beloved physicians of the Eastern Shore, died at his home at Onancock, Va.. June 25, having been ill for a long time. Dr. Powell was a native of Onancock and fifty years of age. After an academic education at local colleges and Harvard University, he took up medicine at Jefferson Medical College, Philadelpiha, from which he received his diploma in 1900. Following this, he served an internship at St. Luke's Hospital, Bethlehem, Pa., before taking up practice at his old home. Dr. Powell had been a member of the Medical Society of Virginia since 1902. He is survived by his wife and two daughters.

Dr. George Harrison Sparks,

Of Brandy Station, Va., died at his home at that place, May 21, following a long illness. He was born in Madison County, Va., in 1869, and, upon completing his academic education, entered the Medical College of Virginia, rereceiving his diploma from that institution in 1900. He joined the Medical Society of Virginia the same year and had been a member since that time.